

FARMERS' MANUAL
AND
ALMANAC

1889



H. S. MILLER & CO.,

MANUFACTURERS OF

Pure Animal Bone Fertilizers,

NEWARK, N. J.



H. S. MILLER & CO.,

MANUFACTURERS OF

Pure Animal Bone

FERTILIZERS,

Pure Ground Bone and
—BONE MEAL.—

FACTORY AND PRINCIPAL OFFICE:

Fronting on Dock St. and Passaic River,
NEWARK, N. J.

Branch Office : 202-206 Buchanan's Wharf, Baltimore, Md.

FOOT OF FREDERICK STREET.

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PREFACE.

In placing our fertilizer on the market, we beg to state that though the name of our firm may appear for the first time as manufacturers of fertilizers, yet the goods are nothing new, being manufactured under the supervision of the oldest and most experienced manufacturers, who have had over forty years' experience in the manufacture of chemical manures, both in this country and in Europe, and under their supervision the work will be conducted. In fact, nearly every employee is an old and experienced hand, having had many years' experience in the manufacture and sale of commercial fertilizers, and whose names are familiar to the fertilizer trade as manufacturers and salesmen. No expense has been spared by us in obtaining the most experienced men in the manufacture of, and representation of our goods.

Our salesmen, who will call upon you in reference to our fertilizers, are old friends and will need no introduction. Any statement which they may make in reference to the goods, may be depended upon, as they will be first-class in every respect. It shall be our aim to place at all times upon the market a grade of goods unsurpassed for quality or price. Our machinery is of the most improved and latest type, expressly adapted to both improve the product, and cheapen the cost of production. There are mills for grinding the rude materials, as well as the manufactured product; mixing pans of the best and latest pattern. Screens and elevators are so arranged and designed to handle and manufacture the stock with the least possible labor and expense. The works are most desirably situated for the transportation of its raw and manufactured goods.

With the Passaic River on its front, and with a branch of the N. J. Central R. R. running into the works, we are enabled to ship and receive goods at the lowest possible figure for transportation, to any part of the country.

The most important part of our argument, and we presume the most interesting to the farmer, is the price and quality. As to the first; experienced help, improved machinery, exceptional facilities to manufacture and the transportation of goods, enables us to keep the price for the quality extremely low. Now as to the quality, the best, and only the best material will be used in the composition of the goods manufactured by us. In the first place we do not use, nor will we use in the manufacture of any of our goods, Charleston Rock or any foreign substance of the kind; our phosphoric acid will be derived from bone.

Bone is, and will ever continue to be the base of all our manures. It is bone first, last and every time. We have never been, nor do we ever expect to be advocates of rock, *for which we have no use*. As to the source from which the nitrogen is obtained to supply the ammonia to our different brands of fertilizers, we use Nitrate Soda, Sulphate of Ammonia, Blood, Fish and high grade tankage. We do not use horn, horn shavings, horn scrap, or any thing of the kind. The potash is principally derived from a high grade sulphate.

In fact, to be brief, the materials only which are considered the best of their respective kinds are used in the manufacture of any brand of goods made by us. If they, therefore, do not give satisfaction, it will be from some other cause than that of the fertilizer, as no pains will be spared to place upon the market a brand of goods unequalled in quality for the price asked.

In the use of these high grade fertilizers care should at all times be taken, that in distributing the seed, it does not come in direct contact with the fertilizer.

H. S. Miller & Co's Pure Bone Flour.

Guaranteed Analysis.

Nitrogen from Organic Matter.....	3.00 to 3.50
Corresponds to Ammonia.....	3.50 to 4.00
Phosphoric Acid, Total.....	20.00 to 25.00
Corresponds to Bone Phosphate.....	47.00 to 52.00

This bone is ground very fine. It is strictly pure bone ground to the fineness of flour; it is adapted especially for mixing with soil for potting purposes, for which one part of flour to twenty-five of soil, is about the right proportion. There is no acid used in the manufacture of this brand. There is, therefore, no danger to be feared from its use, should the fertilizer come in direct contact with the tender roots of the plants. It is a brand very largely used by all prominent florists. A fertilizer giving vigor, strength and color to the plant. A fertilizer which cannot be too strongly recommended to the scientific as well as amateur horticulturists. It is as well an excellent top dresser, or food for cattle or poultry. There are three grades manufactured for this purpose. Fine, medium, and coarse. As food for poultry, the latter would be most desirable. Samples of either grade sent on application.

H. S. Miller & Co's Standard Superphosphate of Lime.

Guaranteed Analysis.

Ammonia (derived from dried blood, Sulphate of Ammonia, Meat and Fish.....	2.85 to 3.25
Phosphoric Acid (available) derived from Animal Bone.....	10.00 to 12.00
Insoluble	1.50 to 2.50
Potash, (derived from high grade sulphate,	1.50 to 2.00

From the above analysis it will be seen that this Standard brand of Fertilizers contains all the elements of plant food, yet in a more concentrated form than is to be found in the best yard manure. It is therefore a complete manure and can be used as a substitute for barn yard manure, containing all the ingredients necessary and in proper proportion for almost any of the cereals, such as wheat, rye, oats and barley; also can be used with great profit on corn and potatoes. For truck gardening it is also a most excellent manure; for seeding down with timothy and clover for lawns or pasture lands, it is a most excellent fertilizer. It may also be used with great profit as a top dressing. When this fertilizer is used in connection with stable manure, it will greatly strengthen the latter. The fertilizer is made from the best material, the ammonia being derived from dried blood, sulphate of ammonia, meat and fish. The phosphoric acid being derived from animal bone (no rock being used in the manufacture of this or any brand made by us); its potash being derived from high grade sulphate, and manufactured in the most thorough and scientific manner known. The mechanical condition is unsurpassed by any brand of fertilizer placed upon the market, a uniformity throughout. Being so free of moisture, its drilling qualities are perfect, and no fear need be entertained that it will clog in the drill. By drilling evenly, uniform crops will be secured. The quantity to be used depends largely upon the richness of the soil, though we should advise the use of from 200 to 300 lbs. per acre.

H. S. Miller & Co's Ammoniated Dissolved Bone Phosphate.

Guaranteed Analysis.

Ammonia (derived from dried blood, Sulphate of Ammonia, Meat and Fish.....	2.00 to 2.50
Phosphoric Acid (available) derived from	
Animal Bone... ..	8.00 to 10.00
Insoluble.....	1.50 to 2.50
Potash, (derived from high grade sulphate.	1.50 to 2.00

This fertilizer, like the Standard, contains all the required elements of plant food for any grain crop. It is not a special but a complete manure, the elements of plant food being in a more soluble and concentrated form than is to be found in stable manure, particularly on soils of a light character, or such as require to be supplied with the ingredients in proportion as found in stable manure, is this fertilizer particularly adapted. On some soils it will be found to equal the Standard, such as the sandy soil of the cotton growing States, where this brand should be used with great profit. It is particularly adapted for the growth of cotton, and the planters of the South can find no better fertilizer to use under their cotton, than our AMMONIATED DISSOLVED BONE.

Like the Standard, its source of nitrogen is derived from dried blood, sulphate of ammonia, fish and meat. The animal bone, its phosphoric acid and its potash being derived from the high grade sulphate. The mechanical condition of this fertilizer is perfect, and its drilling qualities unsurpassed. We therefore recommend this brand both to the farmers of the north, and the planters of the south. It is an all around fertilizer, which can be used on almost any crop, with great profit. It is one of the best manures in the market for *Hops*, and no grower should plant without the use of this valuable fertilizer. It would be safe to advise the use of from 200 to 250 lbs. per acre.

H. S. Miller & Co's Harvest Queen.

Guaranteed Analysis.

Ammonia (derived from dried blood, Sulphate of Ammonia, Meat and Fish....	1.00 to 2.00
Phosphoric Acid (available) derived from Animal Bone.....	10.00 to 12.00
Potash, derived from high grade Sulphate,	1.50 to 2.00

In the manufacture of this brand we have endeavored to place upon the market a fertilizer which shall rival all competitors. The price asked for the quality of goods here offered, certainly cannot be surpassed, if equalled. It is a complete manure, containing all the required elements of plant food for any crop. Its source of nitrogen, phosphoric acid and potash being derived from the same source as both the Standard and Ammoniated Dissolved Bone. Though not quite as high in ammonia as the two previous named brands, yet sufficiently high to warrant its use on any crop. Throughout the States of Maryland and Pennsylvania, this brand should meet the want of the farmer, and we think from past experience, it will be found to be the fertilizer required on most of the soil through the above named States. This brand could be also most profitably used under cotton, and we do not hesitate to advise both planter and farmer to use this brand when the soil does not require as high a grade of goods as the Standard.

The mechanical condition of this fertilizer will be found to equal that of the two previous brands. Also, its drilling qualities are good, and the goods will be found to drill without clogging, the same great care being taken in the manufacture of this brand as in all goods manufactured by us. From 200 to 250 lbs. can be used per acre.

H. S. Miller & Co's Vegetable Compound.

Guaranteed Analysis.

Ammonia, (derived from dried blood, Sulphate of Ammonia, Meat and Fish....	10.00 to 12.00
Phosphoric Acid, (available) derived from Animal Bone.....	8.50 to 10.00
Potash, (derived from high grade sulphate,	3.00 to 4.00

From the above analysis it will be seen that this is a high grade manure, made and prepared with special care, to meet the wants of the truck farm. This fertilizer being high in ammonia, phosphoric acid and potash, may be used with profit on all truck gardens when a special fertilizer is required, and when from two to three crops are taken from the same land in a season. Not only is this fertilizer to be used for the purpose of producing a much larger crop, of so many more bushels per acre, but even a greater source of income than the production of a larger crop may be obtained by the judicious use of this high grade fertilizer, by bringing the crops to maturity some ten days earlier than would be the case were yard manure used in place of the fertilizer. This is an important factor to the gardener, and should not be lost sight of when purchasing manure. Truck farmers on the eastern shore of Maryland and Virginia, have seen the importance of this argument, and are fast taking advantage of the experience of their neighbors, who, by the use of a high grade fertilizer are enabled to place upon the market their goods from one to two weeks in advance of those using stable manure or an inferior grade of fertilizer. Peruvian Guano, which at one time was so largely used by farmers on the Peninsula, is giving way also, to these high grade goods, as the fertilizers contain all the required elements of plant food not only as in the case of nitrogen giving them a quick start, but has the proper food to bring the plant to maturity in the shortest possible time.

H. S. Miller & Co's Corn Fertilizer.

Guaranteed Analysis.

Ammonia, (derived from dried blood, Sulphate of Ammonia, Meat and Fish....	1.50 to 2.00
Phosphoric Acid, (available) derived from Animal Bone.....	6.50 to 7.50
Insoluble.....	1.00 to 1.50
Potash, (derived from high grade sulphate,	3.00 to 4.00

This is a complete manure, and contains the required elements of plant food for the crop for which it is designated. It is not as high a grade fertilizer as is often made by manufacturers for a corn fertilizer, but we believe, after many years of careful observation, there is no fertilizer which can be used under corn which will give more satisfactory results than this brand. It is often stated by farmers that have tested high grade and expensive fertilizers with this grade of goods, that of the two this is by far the most profitable fertilizer to use, producing a crop equal in quantity and weight to a fertilizer costing nearly double the price asked for this brand. We therefore manufacture this brand more especially for the corn crop, yet it can be used for almost any spring crop or light garden truck. As some farmers may desire a higher grade of goods, containing a larger percentage of ammonia and phosphoric acid than is contained in this brand we would advise either the use of the Ammoniated Dissolved Bone, or the Standard, both of which are higher grade fertilizers, yet we doubt if either can be used with profit equal to these goods. In using the fertilizer, the best plan for securing good growth through the entire season, is to broadcast the fertilizer evenly over the whole field, and lightly harrow in. A second application would be very desirable to scatter say a handful around the corn after it has had a few weeks' growth, or it may be used, say same amount, a handful to each hill at time of planting. From three to five bags may be used per acre. A greater or less quantity as it depends greatly on the richness of the land.

H. S. Miller & Co's Potato Fertilizer.

Guaranteed Analysis.

Ammonia, (derived from dried blood, Sulphate of Ammonia, Meat and Fish.. ..	4.50 to 5.00
Phosphoric Acid, (available) derived from Animal Bone.....	8 50 to 10.00
Potash, derived from high grade sulphate,	7.00 to 8.00

Particular attention is paid in the manufacture of this Fertilizer, to have the different necessary plant food elements present in as many varying forms as possible. This is done with the view of supplying in the proper forms the plant food at every stage of growth. Many a crop proves a failure by reason of the want of a proper supply of food during the critical stage of the growth of this valuable crop. In the manufacture of this fertilizer care has been taken to use potash as free as possible from chlorine, as it is thought by many that the presence of chlorine in a fertilizer has the effect of reducing the starch formation. Nitrogen as supplied in Nitrate of Soda, and in Sulphate of Ammonia, are said to be among the most valuable source from which the ammonia can be derived, possessing special value, distinct and apart from each other. Phosphoric Acid is derived from animal bone, *Rock is not used*, and nearly all the phosphoric acid is made soluble and available. The large farmers where this valuable crop is made a specialty, never think of using stable manure. The successful growers advise the chemical fertilizers, saying that the fertilizer not only produces a much larger crop but that the potato is of much finer quality; instead of scales, they are smooth and clean, and of course bring a much higher price on the market, and no farmer should think of growing a crop of potatoes, without a high grade fertilizer. In the use of these high grade fertilizers, care should be used at all times that the plant does not come in direct contact with the fertilizer. From two to four bags should be used per acre.

H. S. Miller & Co's Peach Fertilizer.

Guaranteed Analysis.

Ammonia, (derived from dried blood, Sulphate of	
Ammonia, Meat and Fish.....	2.00 to 3.00
Phosphoric Acid (available) derived from Animal	
Bone.....	8.00 to 10.00
Equal to Bone Phosphate.....	17.00 to 22.00
Potash, derived from high grade sulphate.....	8.00 to 10.00

Repeated inquiries having been made by the farmer for a fertilizer containing food for his peach trees, manufacturers have with varied success placed upon the market a fertilizer designed to meet the wants of the tree; from careful study and much care in the manufacture of these goods, which are prepared particularly for the peach orchard, we believe that this fertilizer will prove successful in meeting the wants for which it was designed. It is a complete manure, and contains the necessary plant food in such proportion as to be most available. Every peach grower realizes the fact that to make his grove a paying investment, he must feed the plant, as he would his cattle. The tree cannot flourish without food, which if not given, will wither and die, or else the fruit becomes of such inferior quality, that with competition so close, there is no profit in shipping; and an inferior grade of goods never pays the shipper. If a tree be well fed it rarely suffers from the yellows, and if well fed often escapes the diseases to which the tree is subject. The fruit, instead of being as we said, of an inferior grade, will, if proper care be taken, be of the best, and for this there is always a demand. We feel, therefore, warranted in advising the peach grower to use on his orchard this fertilizer, which, by judicious use will insure a good crop. As to the quantity to be used, that depends much upon the condition of the soil, age, and condition of the tree. If the trees be young, 150 to 200 lbs. would suffice per acre, while the older or bearing trees would require from say, three to five lbs. per tree. The fertilizer should be scattered broadcast around the tree, the same as in the case of manuring all trees, which as a general rule, is to scatter around the tree as far as its branches extend, then thoroughly work in the fertilizer by harrowing, the more thorough this work is done, the quicker will the fertilizer act as food and become effective.

H. S. Miller & Co's Lawn Fertilizer.

Guaranteed Analysis,

Ammonia, (derived from dried blood, Sulphate of Ammonia, Meat and Fish....	2.00 to 3.00
Phosphoric Acid (available) derived from Animal Bone	7.00 to 8.00
Potash, derived from high grade sulphate,	3.50 to 4.00

The danger arising from the use of barn yard manure on Lawns, has caused a demand for a fertilizer containing plant food the same as stable manure, and yet free from obnoxious seeds. There are many advantages from the use of a chemical fertilizer over barn yard manure. In the first place, by the use of the fertilizer there is no danger of an importation of seeds; the growth of sorrel, weeds, etc. The grass grown by the fertilizer is sought for by the cattle, while cattle often refuse to touch grass over which manure has been spread. The question is so thoroughly understood and appreciated by the farmer and those having beautiful lawns which they desire to feed, and not injure, that we think further comment unnecessary. This fertilizer, when used on the lawn should always be mixed before using, with equal parts of dry earth or plaster. To come in direct contact with the plant would injure it, but if mixed with some divisor, there is no danger of injuring the young plant; besides another great advantage is, that you can much more evenly sow the fertilizer. The fertilizer may be used as a top dressing early in the spring or summer. It should in all cases be applied when the ground is damp, or better, just before a shower, should the season be dry. It would be advisable after sowing the fertilizer to use a hose and thoroughly soak the ground with water after the application. It requires from 200 to 300 lbs. per acre. On a lawn of say 1,000 feet about thirty lbs.

H. S. Miller & Co's Vegetable Fertilizer.

Guaranteed Analysis.

Ammonia, (derived from dried blood, Sul-	
phate of Ammonia, Meat and Fish....	4.50 to 5.00
Phosphoric Acid (available) derived from	
Animal Bone.....	8.50 to 10.00
Potash, derived from high grade sulphate,	7.00 to 8.00

This fertilizer is manufactured especially to meet the want of the truck or market gardener. It is a complete manure and contains all the required elements of plant food as contained in stable manure, though in a much more concentrated form. It may, however, be used in connection with stable manure. It is recommended for all early vegetables :

BEETS, CUCUMBERS, TOMATOES,

MELONS, TURNIPS, CABBAGE,

ASPARAGUS, ONIONS.

On vegetables, the best plan is to sow the fertilizer broadcast, and rake or harrow in lightly. As it contains a large percentage of potash, the fertilizer should not be allowed to come in direct contact with the seed. We should not, therefore, advise the use of the drill in planting the seed with the fertilizer.

H. S. Miller & Co's Raw Bone Phosphate.

Guaranteed Analysis.

Ammonia, (derived from dried Blood, Sul- phate of Ammonia, Meat and Fish.....	3.50 to 4.00
Phosphoric Acid, (available) derived from Animal Bone.....	4.50 to 5.00
Insoluble	7.00 to 8.00
Sulphate Potash.....	2.00 to 2.50

In the manufacture of this brand, we have taken great pains to give you a purely Raw Bone Phosphate. The bones are fresh from the butcher shops and slaughter houses. They have been steamed, then dried, and meat and bone ground together, with acid run through the mills; great care at all times being taken to make the manure, in every respect, first-class. The mechanical condition is very good. It is dry and in fine order, and no fear need be entertained in regard to its drilling quality. It will not gum or clog the drill. The fertilizer, therefore, being sown evenly, all parts of the field will be equally fertilized, and the crop will grow uniformly throughout. This fertilizer is well adapted to seeding down, like the ground bone, it is a most profitable fertilizer for fruit trees and vines. It is also a most excellent fertilizer for grain; in fact, there is scarcely any case in which this brand cannot be used with great profit. The quantity to be used depends somewhat (as in the case of all manure) upon the richness of the soil. The average quantity we should advise, would be, from 250 to 300 lbs. per acre.

H. S. Miller & Co's Pure Bone Meal.

Guaranteed Analysis.

Nitrogen from Organic Matter.....	4.11 to 4.95
Corresponds to Ammonia.....	5.00 to 6.00
Phosphoric Acid, Total.....	20.00 to 52.00
Corresponds to Bone Phosphate.....	47.00 to 52.00

Great care is taken in the manufacture of this brand. The fineness to which the bone is ground, and its general mechanical condition is unsurpassed by any other brand. It is absolutely pure bone, and is without admixture or treatment with any dryer, nitre cake or plaster. The fineness to which the bone is ground makes it available almost immediately after being incorporated with the soil. The phosphates being rendered soluble by the action of the water and organic acids in the soil, are, therefore, rapidly taken up as plant food. This brand of fertilizer was for many years widely known, and had gained a great reputation with farmers who desired a strictly pure, very fine bone meal. Of late, it has not been placed upon the market to any great extent; the price asked not warranting its manufacture. We are now, however, prepared to manufacture this celebrated brand of Bone Meal, which is especially adapted to plants, cattle or poultry.

H. S. Miller & Co's Ground Bone.

Guaranteed Analysis.

Nitrogen from Organic Matter.....	2.70 to 2.90
Corresponds to Ammonia.....	3.25 to 3.50
Phosphoric Acid, Total.....	12.00 to 14.00
Corresponds to Bone Phosphate.....	26.00 to 30.00

This Fertilizer is, strictly speaking, a bone manure. Bone and meat being the only source from which we derive our phosphoric acid or Bone Phosphate. In the manufacture of these goods all the bones from the animal are used. We do not sort or pick out the hard from the soft bone, but use all the bone indiscriminately as they come from the animal. The bone used are mostly fresh slaughter house bone, boiled sufficient only to remove the meat and abstract the grease, thereby increasing the agricultural value of the bone by removing the fat, which otherwise would retard the decomposition of the bone in the soil.

This bone manure is a most valuable fertilizer for all crops. It is principally adapted, however, for seeding down fruit trees, vines, etc. This fertilizer should not be sown broadcast, without harrowing or lightly incorporating with the soil; otherwise, the bone being exposed to the atmosphere, the ammonia is liable to escape and the benefits are to a greater or less extent lost to the crop. From 250 to 300 lbs. should be used per acre.

USE THE GROUND BONE—

For seeding down Meadows, Pasture Land and Lawns.

USE THE PURE BONE MEAL—

For Seeding Down, Top Dressing, Flowers, Poultry and Cattle.

USE THE STANDARD—

For Wheat, Barley, Oats, Cotton, Corn, Potatoes and Tobacco, Garden Truck.

USE THE AMMONIATED DISSOLVED BONE—

For Barley, Cotton, Corn, Oats, Wheat and Buckwheat.

USE THE HARVEST QUEEN—

For Oats, Rye, Wheat, Barley, Buckwheat and Cotton.

USE THE CORN MANURE—

For Sweet Corn, Field Corn, Light Garden Truck and Potatoes.

USE THE HIGH GRADE "SPECIAL" VEGETABLE COMPOUND—

For early Garden Truck, when an exceedingly high grade manure is required.

USE THE VEGETABLE FERTILIZER—

For Tomatoes, Beans, Peas, Egg Plant, Celery.

BONE FLOUR FOR POTTING—

Cabbage, Cauliflower, Turnips, Onions.

USE THE PEACH TREE FERTILIZER—

For Peach Trees, Grape Vines, Strawberries,
Etc.

USE THE POTATO FERTILIZER—

For Irish Potatoes, Sweet Potatoes and Vegetable
Truck.

USE THE LAWN FERTILIZER—

For Top Dressing for Lawns, Grass Plots, Tennis
Grounds, etc.

USE RAW BONE PHOSPHATE—

For Seeding Down Wheat and Rye, and General
Use.

TESTIMONIALS.

MACON, GA., Nov. 12th, 1888.

*Messrs. H. S. Miller & Co., 202, 206 Buchanan's Wharf,
Baltimore, Md.:*

DEAR SIRS—If we should send you testimonials from each planter who used your brands the past season, it would consume too much of the “Manual.” We therefore give a list of some of the principal truck farmers, cotton and corn planters, to whom we sold some, and we can safely say that they are among the wealthiest, largest and best known planters in Georgia. We have heard *nothing* but the very *highest* praise from every one to whom we sold Miller's Fertilizers, and have no trouble in making collections for same.

Yours truly,

RODGERS, WORSHAM & CO.

BIBB CO.

S. T. Coleman, Dry Goods Merchant and Planter, Macon.
 Hardin T. Johnson, Grocery Merchant and Planter, Macon.
 W. H. Jones & Son, Grocery Merchant and Planter, Macon.
 Judge C. J. Harris, Planter, Macon
 W. H. Virgin, Capitalist and Planter, Macon.
 J. G. Ruau, Cotton Buyer and Planter, Macon.
 R. H. Plant, Banker and Planter, Macon.
 Harry S. Edwards, Novel Writer and Planter, Macon.
 Edward Long, Vegetable Gardener, Macon.
 David Milne, Vegetable Gardener, Macon.
 A. C. & T. G. Holt, Cotton and Corn Planters, Walden.
 John T. Skipper, Cotton and Corn Planter, Walden.
 Robt. Burkett, Cotton and Corn Planter, Burketts.
 David & T. A. Clay, Cotton and Corn Planters, Macon.
 M. M. Minshew, Cotton and Corn Planter, Walden.
 R. L. & G. W. Yates, Cotton and Corn Planters, Harts.
 John Y. Lowe, Capitalist and Planter, Macon.
 L. B. & A. D. Calhoun, Cotton and Corn Planters, Walden.
 B. T. Ray, Cotton and Corn Planters, Macon.
 H. H. Clark, Truck, Cotton and Corn Planter, Walden.

H. J. Berkner, Merchant and Planter, Macon.
 G. W. & J. T. Barfield, Cotton and Corn Planters, Walden.
 H. Luke Smith, Capitalist and Planter, Macon.
 J. A. Whitesides, Ginner and Planter, Rutland.
 J. F. Lumsden, Cotton and Corn Planter, Loraine.
 W. B. Rogers, Cotton and Corn Planter, Warrior.
 Ellerson Edwards, Cotton and Corn Planter, Macon.
 C. W. Howard & Bro., Cotton and Corn Planters, Loraine.
 R. F. & T. R. Onsley, Cotton and Corn Planters, Macon.
 S. C. Chambliss & Son, Cotton and Corn Planters, Harts.

Of course you will understand that all these P. O. are in *Bibb Co.*—Macon, Loraine, Walden, Warrior, Burketts, Rutland, Harts.

CRAWFORD CO.

M. J. Moore, Cotton and Corn Planter, Ceres.
 E. E. Dent, Cotton and Corn Planter, Knoxville.
 S. H. Cansey, Cotton and Corn Planter, Knoxville.
 J. B. Long, Cotton and Corn Planter, Knoxville.
 J. L. Bryant, Cotton and Corn Planter, Knoxville.

TWIGGS CO.

Dr. W. O'Daniel, Cotton and Corn Planter, Bullards.
 R. L. Harrison, Cotton and Corn Planter, Jeffersonville.

MONROE CO.

J. W. Newton, Banker and Planter, Forsyth.

JONES CO.

H. M. Moore, Cotton and Corn Planter, James.
 John Roberts, Cotton and Corn Planter, Roberts.
 T. H. Donnan, Cotton and Corn Planter, Griswoldville.
 McKay Bros., Cotton and Corn Planters, Five Points.
 John Bradley, Cotton and Corn Planter, Franks.
 S. B. Glawson, Cotton and Corn Planter, Five Points.
 Dr. John Hardeman, Cotton and Corn Planter, Haddocks.

HOUSTON CO.

A. J. Houser, Cotton and Corn Planter, Fort Valley.
 S. M. Bassett, Cotton and Corn Planter, Powersville.
 T. N. White, Cotton and Corn Planter, Echeecone.
 W. P. Simmons, Cotton and Corn Planter, Byron.
 Dr. J. M. Simmons, Seed Grower, Cotton and Corn Planter, Perry.

Dr. M. W. Havis, Cotton and Corn Planter, Perry.
 J. A. Smith, Cotton and Corn Planter, York.
 W. S. King, Merchant and Planter, Feagins.
 Bright Harper, Cotton and Corn Planter, Fort Valley.
 J. H. Allen, Cotton and Corn Planter, Fort Valley.
 H. W. Mann, Merchant and Planter, Echeeconee.
 Josiah Bass, Cotton and Corn Planter, Echeeconee.
 S. L. Norwood, Cotton and Corn Planter, Perry.
 Dr. J. P. Newman, Cotton and Corn Planter, Feagins.

TAYLOR CO.

T. J. Amerson, Cotton and Corn Planter, Reynolds.
 J. A. Foster, Cotton and Corn Planter, Reynolds.

GRAYSBURG, N. C., Nov. 10th, 1888.

Messrs. H. S. Miller & Co., Baltimore, Md :

DEAR SIRS—The parties to whom I sold your Guano last season are well satisfied with its results, and expect to use it again. It is as good as ——— if not better.

Yours truly,

“WALTER GRANT.”

FORT HAMILTON, L. I., Nov. 8th, 1888.

My Dear Mr. Langman :

I must write to thank you for the Fertilizer of H. S. Miller & Co., and must candidly say it is splendid stuff. My ground, as you know, is very bad, and nothing in it—in fact, my tomato and vegetable marrow plants would not come to anything till I put some of this Fertilizer of yours round each of them, and then they improved wonderfully—so much so that I kept nearly all the village supplied. Remember me to Mr. Aspenall and all at home, and also let me know how much I am indebted to you.

Believe me, truly yours,

HARRY E. TURTON.

RIDGEWOOD, N. J., Sept. 14th, 1888.

Mr. Clark, care of H. S. Miller & Co., Newark, N. J.:

I think it is rather late, but for another year's trade I will handle 5 times the quantity that I did this year.
Great satisfaction all over.

Yours, &c.,

Ridgewood, N. J.

J. BATISKI.

MORRISTOWN, N. J., May 11th, 1888.

Mr. Clark, care of H. S. Miller & Co., Newark, N. J.:

DEAR SIR—I can sell some more of your Fertilizers at the same as I have been selling, but if I have to add, as you wrote me a few days ago, I do not know how it will be, as I sold nearly all I received from you before I got your letter, *and all that bought like it very much, as it works so nicely in a drill.*

Yours respectfully,

J. M. FROST.

SAYBROOK, CONN., April 4th, 1888.

I think it possible to use another ton of Standard Phosphate. It seems to take very well with our farmers.

Yours,

G. W. DENISON.

Mr. H. S. Miller & Co.:

DEAR SIR—The Bone Meal Fertilizer, which I purchased of you, is the best I ever used. I used it on poor ground, for mangles, and I had a larger and better crop than on ground where I fertilized heavily with barn-yard manure, and I would cheerfully recommend it to all who have not used it.

Very truly yours,

FRANK E. PARCELLS.

Nat. Hurst Dairy, Summit, New Jersey.

Oct. 12th, 1888.

Col. C. A. M. Martin, Prop.

SUCCASUNNA, N. J., May 28th, 1888.

Messrs. Miller & Co.:

DEAR SIRS—I must state right here that your Fertilizer is giving a decided satisfaction so far. The ton of Harvest Queen Mr. Hunter ordered, he put on 15 acres of oats, on poor ground, and it is surpassing in growth all of the oats in the neighborhood, and I am not very backward in pointing them out to those who don't believe in fertilizers. I think there will be a large demand another year in this place for it, notwithstanding the numerous other agents here. *I wish you would send me up 500 potato and 500 lbs. of Corn Fertilizer in barrels as soon as you conveniently can.* I will remit to you the amount due on orders filled as soon as the time expires and I collect, which is about 30 days.

Yours truly,

RICHARD FITZHERBERT.

LAMOTTE, MD., Nov. 8th, 1888.

Messrs. H. S. Miller & Co., Baltimore, Md.:

DEAR SIRS—Mr. Bay paid me for the Potato Fertilizer, and while the potato crop was not good in this part of the country, he is satisfied that your goods are excellent, and will likely want more in the spring. You struck an honest man when you struck Mr. Nat. Bay. Will settle with you when I come to Baltimore.

Yours truly,

L. A. J. LAMOTTE.

NORFOLK, VA., Nov. 16th, 1888.

Mr. W. W. Oliver:

DEAR SIR—I used H. S. Miller & Co.'s Vegetable Compound Fertilizer alongside my cabbages this last season at the rate of 20 pounds every 150 yards each time I fertilized them, and the result was, I had as large and fine cabbage as I ever grew. I also used under my

Irish potatoes H. S. Miller & Co.'s Potato Fertilizer at the rate of 20 pounds to every 80 yards, and made about the best crop I ever grew. I experimented on a piece of sandy land with $4\frac{1}{2}$ barrels early rose potatoes and used this Fertilizer. The yield was 162 barrels of No. 1 potatoes. I expect to use the same Fertilizer again.

Respectfully,

T. WILSON SELDEN.

LITTLETON, N. C., Oct. 2nd, 1888.

Messrs. H. S. Miller & Co., Baltimore, Md. :

DEAR SIR—Your favor 27th Sept., 1888, and contents duly noted. I have asked several parties to whom I have sold your Guano this year, and they speak very highly of same, and say they are well pleased, and will take pleasure in giving a certificate on same.

Yours truly,

SOL. J. STALLINGS.

WESTWOOD, MD., Oct. 10th, 1888.

Messrs. H. S. Miller & Co. :

DEAR GENTS—I have used your goods this year, and they have given general satisfaction. I cheerfully recommend them to all good farmers as first-class fertilizers.

Yours respectfully,

J. BURNS WILSON.

GOLDSBORO, N. C., Aug. 21st, 1888.

Messrs. Morris & Taylor :

DEAR SIRS—I have used H. S. Miller & Co.'s Guano this year, and think it the best Guano that I have used in ten years.

Very truly yours,

WILLIAM CARMARY.

GOLDSBORO, N. C., Aug. 21st, 1888.

Messrs. Morris & Taylor :

DEAR SIRs—I have used H. S. Miller & Co's Guano this year, and think it the best on the market now.

Very truly,

MARSHALL CONINGIN.

GOLDSBORO, N. C., Aug. 21st, 1888.

Messrs. Morris & Taylor :

DEAR SIRs—I think H. S. Miller & Co's Guano as good as any Guano on the market. My son used some of it this year.

Yours, &c.,

J. E. SUGG.

GOLDSBORO, N. C., Aug. 21st, 1888.

Messrs. Morris & Taylor :

DEAR SIRs—I have used H. S. Miller & Co's. Guano this year, and I would not lay it down for any that I ever used. My cotton has more balls out at this time than any I ever had.

Very truly yours,

J. W. CARMARY.

MYERSVILLE, FREDERICK Co., MD., June 6th, 1888.

Messrs. H. S. Miller & Co. :

Your letter and samples of Fertilizer received. They are very fine indeed. Your Ground Bone is much finer and in better condition than you ever had before. Please give me price of Ground Bone—and analysis. You will please ship me to Frederick 12 tons of Raw Bone—although I would prefer the steamed bone, as it acts quicker and is cheaper. I hope to be able to sell largely of your goods this fall from the prospects of wheat generally.

Respectfully yours,

DANIEL V. HARP.

Please let me know when goods will arrive probably.

GAITHERSBURG, MD., Aug. 21st, 1888.

Messrs. H. S. Miller & Co. :

GENTLEMEN—We have had some very favorable reports from your goods, but spring crops are not yet harvested.

Truly yours, etc.,

I. T. FULKS & Co.

MIDDLEBURG, N. C., Oct. 9th, 1888.

Messrs. H. S. Miller & Co. :

DEAR SIRS—Yours Oct. 3rd received few days ago. I will get up the certificates of farmers who used your Guano this year as they come to settle. Think I can get as many favorable to your stuff as you care to have. If you want them earlier than say 15th Nov. to 1st Dec., let me know, and I will make effort to get them by what time you may want them. My own partiality to and faith in your goods may incline me to them, but I think the extent to which they have gained hold on the confidence of the fertilizing people generally is not around me preceded.

Very truly,

C. J. BURTON.

CHURCHVILLE, MD., Sept. 18th, 1888.

J. B. Hanway, Esq., Joppa, Md.:

DEAR SIR—In answer to your inquiry of the 8th, in regards to the H. S. Miller & Co.'s Harvest Queen we bought from you last spring, would say we are well pleased with the result. Applied it on tomatoes in hill between 400 and 500 lbs., also on corn, and have the best corn we have had for years. Please ship to Aberdeen three tons of your Ground Bone I was looking at. I want it for wheat.

Yours truly,

C. COALE & BRO.

FRANKLINVILLE, MD., Sept. 11th, 1888.

Mr. J. B. Hanway, Joppa, Md. :

MY DEAR SIR—I used your H. S. Miller & Co.'s Harvest Queen Fertilizer on my oats crop, and got 53½ bushels to the acre. I have two (2) fields of corn, on which I used the Harvest Queen, and they promise a large yield.

I am, very truly yours,

A. A. BLAKENEY.

Sept. 14th, 1888.

J. B. Hanway, Esq., Joppa, Md. :

DEAR SIR—In reply to your inquiry in reference to H. S. Miller & Co.'s Harvest Queen Phosphate, bought from you last spring, would say that I was as well pleased with it as any Fertilizer I ever used. I applied in hill for tomatoes, and had splendid results.

Yours truly,

GEO. ARCHER.

Wilna P. O., Harford Co., Md.

DUDLEY, N. C., Aug. 18th, 1888.

Messrs. Morris & Taylor, Goldsboro, N. C. :

DEAR SIRS—I used H. S. Miller & Co.'s Guano this year. It has done as well as any I ever used.

Respectfully,

J. P. O. BERRY.

DUDLEY, N. C., Aug. 18th, 1888.

Messrs. Morris & Taylor, Goldsboro, N. C. :

DEAR SIRS—I used H. S. Miller & Co.'s Guano this year. It has given satisfaction.

Very respectfully,

R. J. O. BERRY.

DUDLEY, N. C., August 20th, 1888.

Messrs. Morris & Taylor :

SIRS—We used your Guano, manufactured by H. S. Miller & Co., and think we can recommend it as a first-class fertilizer, equal to any we ever used.

C. HOLT, C. O. BERRY.

YAPHANK, L. I., Sept. 13th, 1888.

Mr. H. S. Miller & Co. :

I take pleasure in enclosing my check on the Seventh Ward National Bank, of New York, for \$——, for my account, which I trust will have your approval. I believe your fertilizers have given excellent satisfaction this season.

Very truly yours,

ROSSELL DAVIS.

GOLDSBORO, N. C., Aug. 23d, 1888.

Messrs. Morris & Taylor :

GENTLEMEN—I have given your H. S. Miller & Co. Ammoniated Dissolved Bone a *fair* trial by the side of Guano and *could tell no difference*, which is saying a good deal for it, as it requires the *best* of Guanos to keep apace with ———

Respectfully,

T. B. PARKER.

DUDLEY, N. C., August 18, 1888.

Messrs. Morris & Taylor :

DEAR SIR—I used H. S. Miller & Co. Guano and has done as well as any Standard Guano I have used.

Yours truly,

J. M. WIGGINS.

CHARLOTTE, N. C., Nov. 1st, 1888.

Messrs. H. S. Miller & Co., Baltimore, Md. :

GENTS—You wrote us a circular letter some time ago asking us the results of Harvest Queen Guano. At the

time it was received we had not made any enquiry of the customers who used it, and the letter was misplaced. We have been approached by a number of customers recently, who used Harvest Queen, and all of them speak in high praise of it—say it beats anything used by the side of it.

Yours truly,

J. G. SHANNONHOUSE & Co.

TEMPERANCEVILLE, VA., Sept. 1st, 1888.

Mr. H. E. Byrd :

DEAR SIR—The ton of H. S. Miller & Co. Standard Fertilizer I bought of you I used for Irish potatoes on very ordinary land. I harvested a fine crop of potatoes, and now have growing on same land a good crop of corn. I believe it the best Fertilizer for potatoes on the market. Shall use it next season.

Truly yours,

D. H. DENNIS.

TEMPERANCEVILLE, VA., Sept. 1st, 1888.

H. E. Byrd :

DEAR SIR—The H. S. Miller & Co. Harvest Queen Fertilizer I got from you I used on Irish potatoes, alongside of a higher grade Fertilizer which cost \$12 00 per ton, as well as with mixture bone. The Harvest Queen did best of all in earliest crop and largest yield. I consider it the best Fertilizer on the market for early crops. Shall use it next season.

Respectfully,

C. DARNBRICK.

MURFREESBORO, N. C., Oct. 19, 1888.

Messrs. H. S. Miller & Co.:

GENTLEMEN—Yours of Sept. 24th to hand and contents noted, and would have been answered long since but for the absence of the writer. Our crops being

almost a total failure in our section this season, it is impossible for us to give you any report that might be of any advantage to you, but in the early part of the season we made enquiry as to your goods, and every report we had was that your Guano was holding out with any.

Yours truly,

LAWRENCE & VAUGHAN.

NORFOLK, VA., Oct. 20th, 1888.

Messrs. H. S. Miller & Co.:

SIRS—I bought some of your potato goods last spring from W. W. Oliver, which I applied under my beans against higher grade goods, which proved to be quite satisfactory, and I feel sure your potato goods contains as near its money value as any goods we have on our market at the same price per ton. I have never bought any of your high grade goods.

Yours respectfully,

G. W. FRIZZELL.

129 Church St., Norfolk, Va.

YOUNGSVILLE, N. C., Oct. 10th, 1888.

Messrs. H. S. Miller & Co.:

Yours received. If price and goods are kept as claimed, and as goods should, as the Field Test have been highly satisfactory, there is no reasons, if the goods are properly handled, but its sales will steadily increase. It is so easy to get testimonials I think the above the best means of permanency and success, yet I believe as you that a few from those who are free and really have influence will do good. I will attend your request with a view of mutual benefit.

Respectfully,

W. B. ALLEN.

P. S.—I will need 50 tons or more.

OAK HALL, VA., Sept. 1st, 1888.

H. E. Byrd :

DEAR SIR—The Harvest Queen Fertilizer, made by H. S. Miller & Co., that I procured of you acted finely for me on Irish potatoes. I consider it second to none on the market for early crops.

Respectfully,

JAMES O. JOHNSON.

SHORTERVILLE, ALA., June 4th, 1888.

Messrs. H. S. Miller & Co., Baltimore, Md.:

GENTLEMEN—Your letter of enquiry received. Your goods, so far as we have heard, have given satisfaction, and we think it one of the best Guano on the market. We have heard nothing of any Alabama state analysis.

Yours, &c.,

T. J. FARMER & Co.

BALTIMORE, April 6th, 1888.

GENTLEMEN—Please ship Mr. T. I. Grahame, South Marlboro, 3 bags H. S. Miller & Co.'s Standard Phosphate—first-class goods—*none of the old * * * * ** truck to-morrow via Weems Line Steamers. Charge me.

Respectfully,

FRANK O. SMITH.

FREDERICKSBURG, VA., April 9th, 1888.

Messrs. H. S. Miller & Co.:

GENTS—Please ship by to-morrow steamer 5 tons Harvest Queen Phosphate. The sample jars sent us by express have been received, as also the advertising matter. We are distributing the advertising matter and showing the samples to our customers. The latter are very pretty.

Yours truly,

WILLIS & CRISMOND,

Per MORTON.

GOLDSBORO, N. C., Aug. 7th, 1888.

Messrs. H. S. Miller & Co., Baltimore, Md.:

GENTS—Yours of the first inst. received and noted. The reports of your goods so far are very favorable. Everybody seems to be well pleased with them. The seasons have been unfavorable, and crops are not as good as they would have been with more favorable season. We are very dry, and crops are suffering for want of rain. Cotton—the weed is small, but is doing very nicely. Fear the dry weather will make it shed. Will send you some certificates in a few days, and if our customers are all well pleased when the crop is gathered we can get you any amount of them. Hoping that you may have favorable reports from all sections from your goods, we remain,

Yours,

MORRIS & TAYLOR.

WOODBINE, PA., Aug. 17th, 1888.

Mr. T. Z. H. Murphy:

Replying to your enquiry as to the use of the H. S. Miller & Co. Fertilizer, procured of you this spring, would say that it has given me most excellent satisfaction on both corn and tobacco. I used it alongside of other goods, and it is ahead of it on both corn and tobacco. Shall use Miller's this fall on wheat.

WM. SHIRREY,

Farm Grove, Pa.

CLAYTON, DEL., Oct. 29th, 1888.

Messrs. H. S. Miller & Co., Newark, N. J.:

GENTLEMEN—Enclosed you will find amount of my account. I like your Fertilizer very well.

Yours truly,

(Signed) "W. D. HUDSON."

OFFICE OF W. D. DAY,
DEALER IN FANCY AND STAPLE DRY GOODS, CLOTHING,
NOTIONS, ETC. }

(AGENT FOR BEST BRANDS OF GUANO.)

PERRY, GA., Oct. 9th, 1888.

Messrs. H. S. Miller, & Co.:

GENTS—In reply to yours received several days since have to say that the reports from your Guano so far as I can hear are good. I am authorized by Dr. M. W. Havis, who I sold to this season, to say that he wants nothing better in fertilizers than H. S. Miller & Co.'s goods, and I expect to use no other as long as I can get it. I could get others who would speak of the goods in the same terms.

Respectfully,

(Signed)

"W. D. DAY."

Messrs. H. S. Miller & Co., Baltimore, Md.:

DEAR SIR—Your favor of the 27th ulto. came duly to hand, but owing to sickness I failed to attend to it. I can say though that so far as I have been informed your Phosphate has given as good satisfaction as any I have ever sold.

Yours truly,

(Signed)

R. B. SALISBURY.

Hamilton, N. C.

UPPER X ROADS, MD., Sept. 29th, 1888.

Messrs. H. S. Miller & Co., Baltimore, Md.:

DEAR SIR—In reply to your inquiry asking how I am pleased with the fertilizer purchased of you last spring, I can say this, that on 10 acres where I used 250 lbs. of the "Harvest Queen" to the acre, I thrashed out 425 bushels of oats. I think this is doing very good.

Yours truly,

(Signed)

"JOHN A. LAMB."

HOLLYVILLE, DEL., Oct. 27th, 1888.

Messrs. H. S. Miller & Co., Baltimore, Md.:

DEAR SIRS—Herewith I give you my check for \$—— on account. I believe your Bone and Fertilizer to be the best on the market.

Yours,

(Signed)

"B. C. PRETTYMAN."

HEATH, Oct. 4th, 1888.

Mr. H. S. Miller & Co.:

DEAR SIR—Enclosed find check for \$——, amount of your bill of Sept. 15th. The goods were fine. I think the bone will sell well. All has been used except one barrel, which I have as a sample.

Respectfully,

E. L. GRIFFIN,

Heath, N. Y.

GOLDSBORO, N. C.

Messrs. Morris & Taylor, Agents:

SIRS—In compliance with your request, I have to say of "H. S. Miller & Co.'s A. D. Bone Fertilizer," that so far as I am able to judge of its merits, at this time, it now being too early to pass final judgment, that it is one of the finest—if not the best—manipulated fertilizer now on our market. I have one premium acre treated to 500 lbs. of the aforesaid fertilizer, that I planted May 22nd, which is now 3½ feet high, and 4 feet broad—on an average, still green and growing. I have 3 or 4 acres treated to 167 lbs. per acre, that is also green and growing finely—the above mentioned lots of cotton is fully equal to others where *raw ground bone* was used in same quantity.

Respectfully,

ABBOTT L. SWINSON.

GOLDSBORO, N. C., Aug. 8th, 1888.

T. J. FARMER & CO.,
 DEALERS IN GENERAL MERCHANDISE, FANCY AND
 FAMILY GROCERIES. }

SHORTERVILLE, ALA., Oct. 22nd, 1888.

Messrs. H. S. Miller & Co., Baltimore, Md.:

DEAR SIRS—Replying to yours of recent date, the goods have given universal satisfaction, and all who used them last season express an anxiousness for the same goods for their next crop. We hope to be able to use it almost absolutely in our trade. We shall want to order out early.

(Signed)

Yours, &c.,

"T. J. FARMER & Co."

MACON, GA., April 26th, 1888.

H. S. Miller Co., Baltimore, Md.:

Ship to-day ten tons Standard here. Your Guano takes well.

ROGERS, WORSHAM & Co.

LEVEL P. O., MD., Oct. 31st, 1888.

Jos. B. Hanway, Esq., Joppa, Md.:

DEAR SIR—Yours received, and in reply would say the corn was planted on 22nd of June, about 14 acres. I applied 400 lbs. of H. S. Miller & Co.'s Fine Bone Meal to the acre broadcast and 200 pounds of H. S. Miller & Co.'s Harvest Queen Phosphate in the hill. I raised 54 tons and 500 pounds of corn. The Phosphate ran out before we quite finished; that left a few rows without Phosphate. We could see considerable difference in the corn during the growing. The rows of corn that had no Phosphate was much smaller and quite irregular. I believe my crop of corn was very much increased by the use of the Phosphate. It was the second year the field had been in corn.

Yours truly,

(Signed)

"J. F. KENLY."

1871

1872

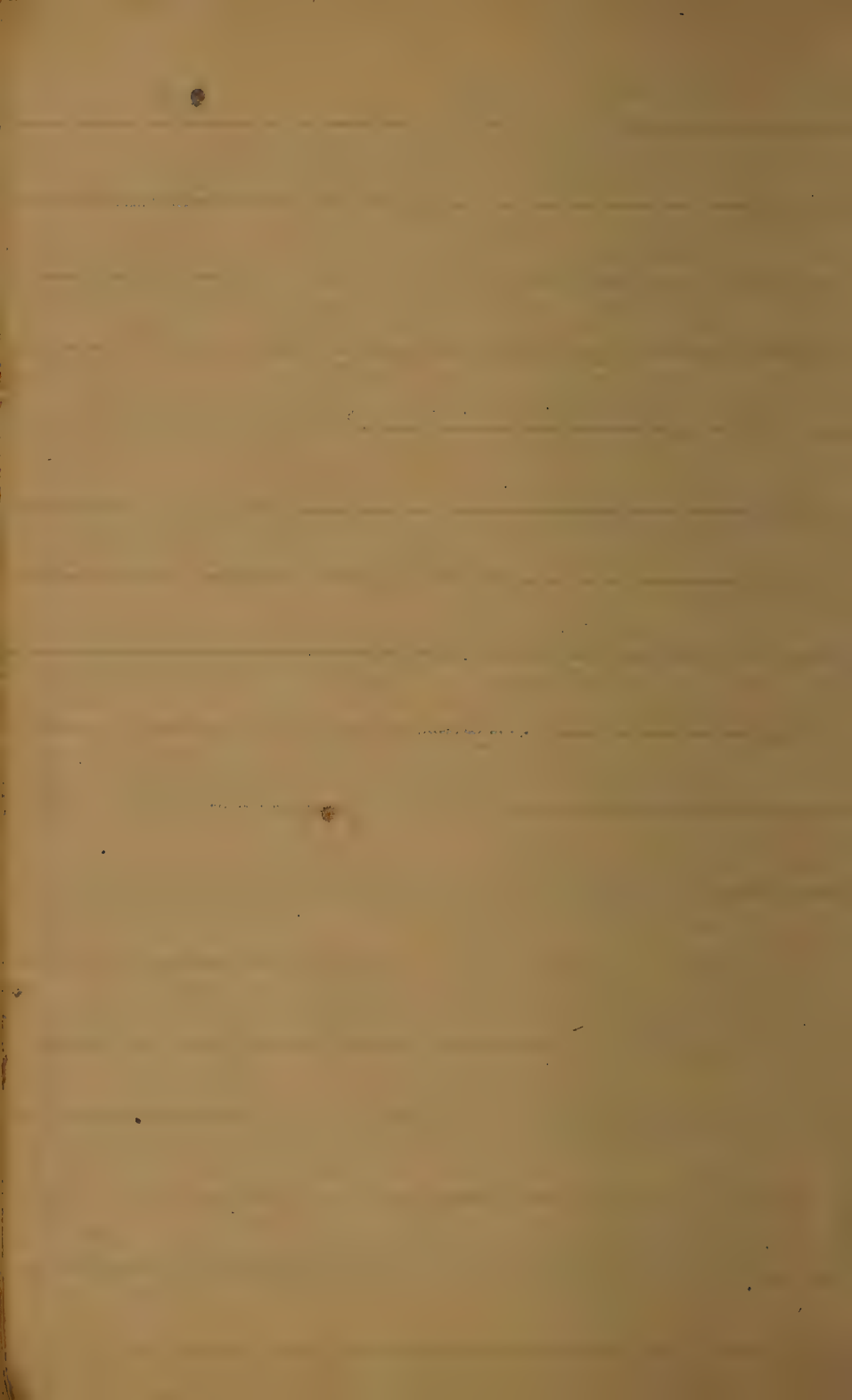
1873

1874

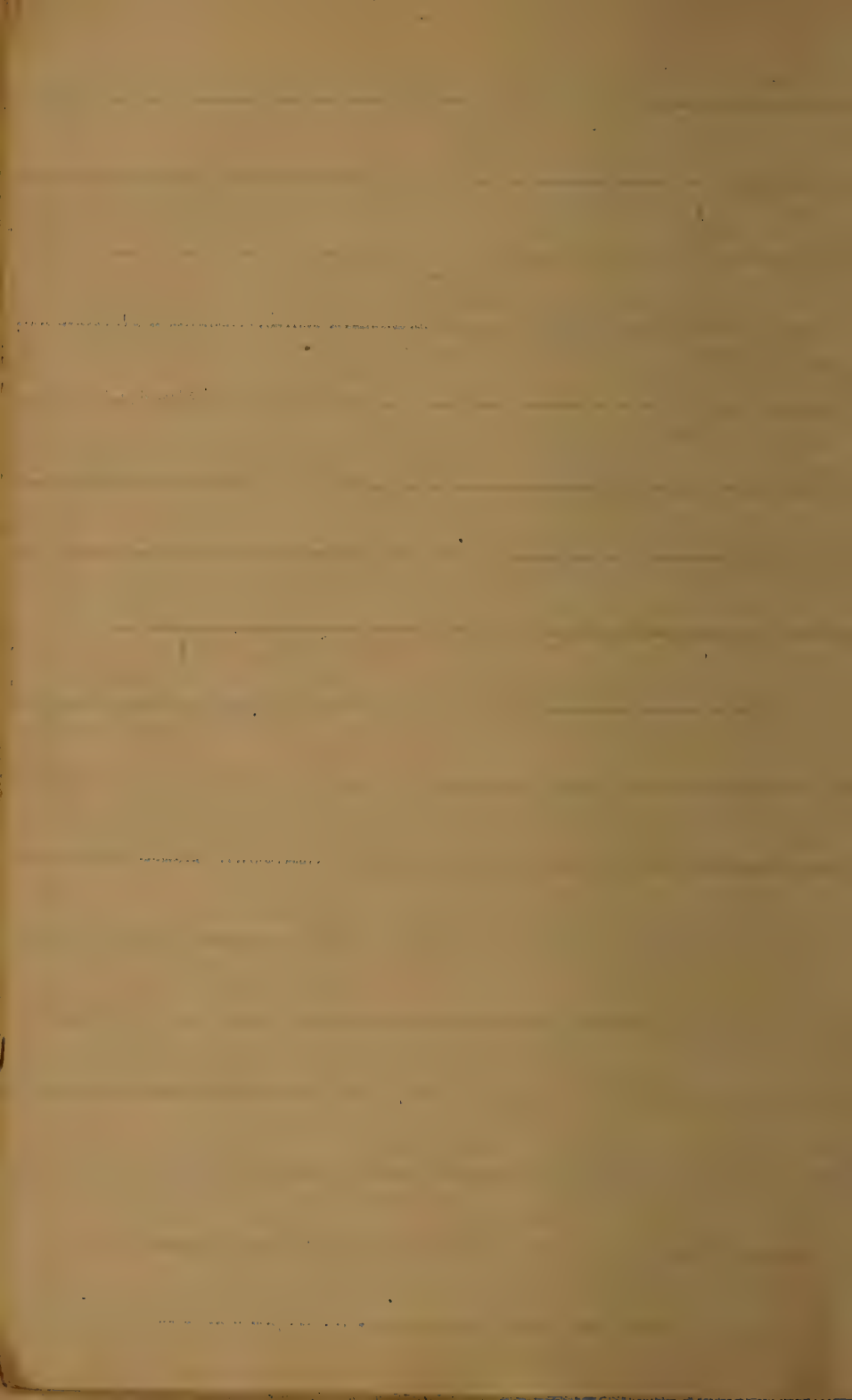
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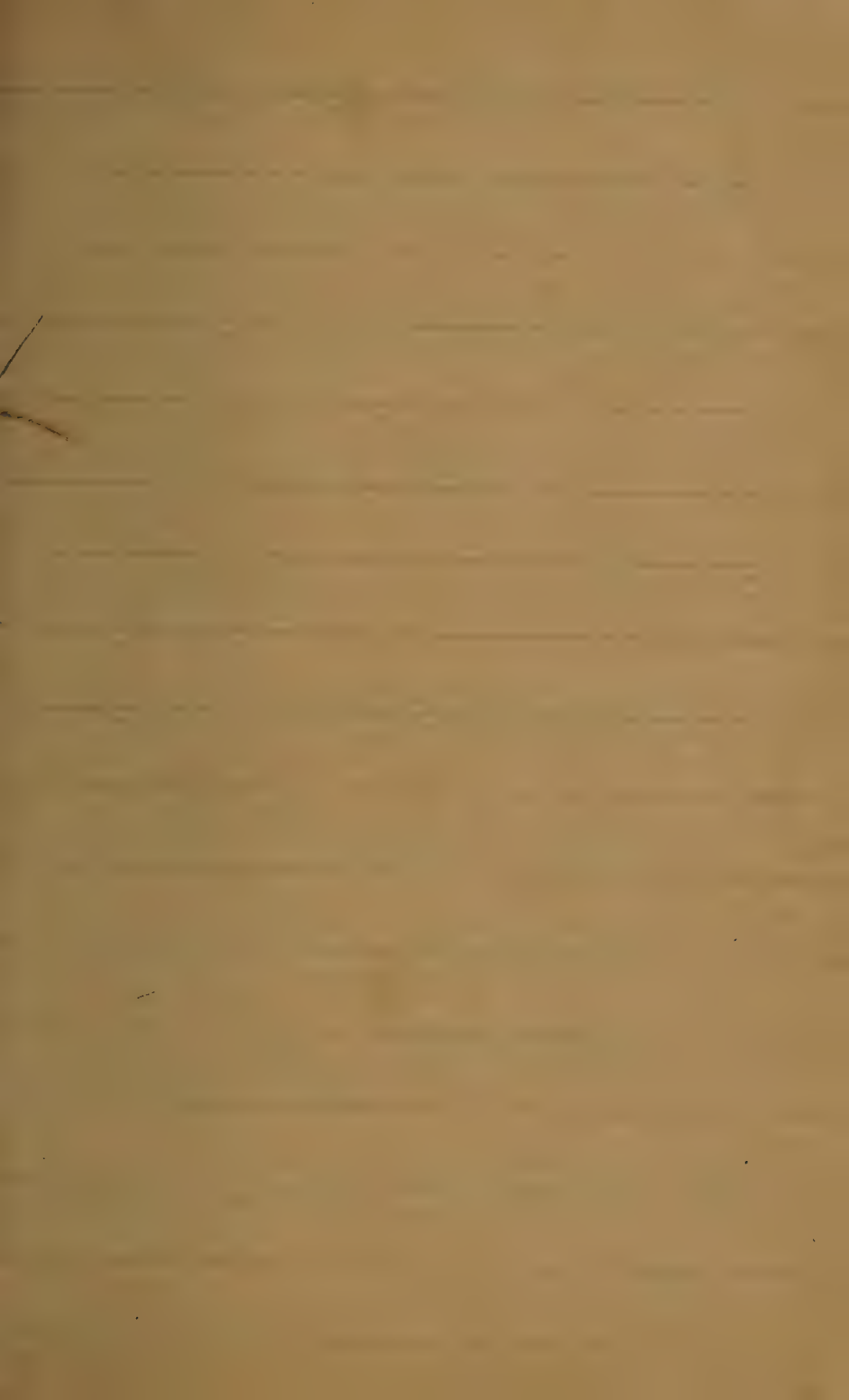
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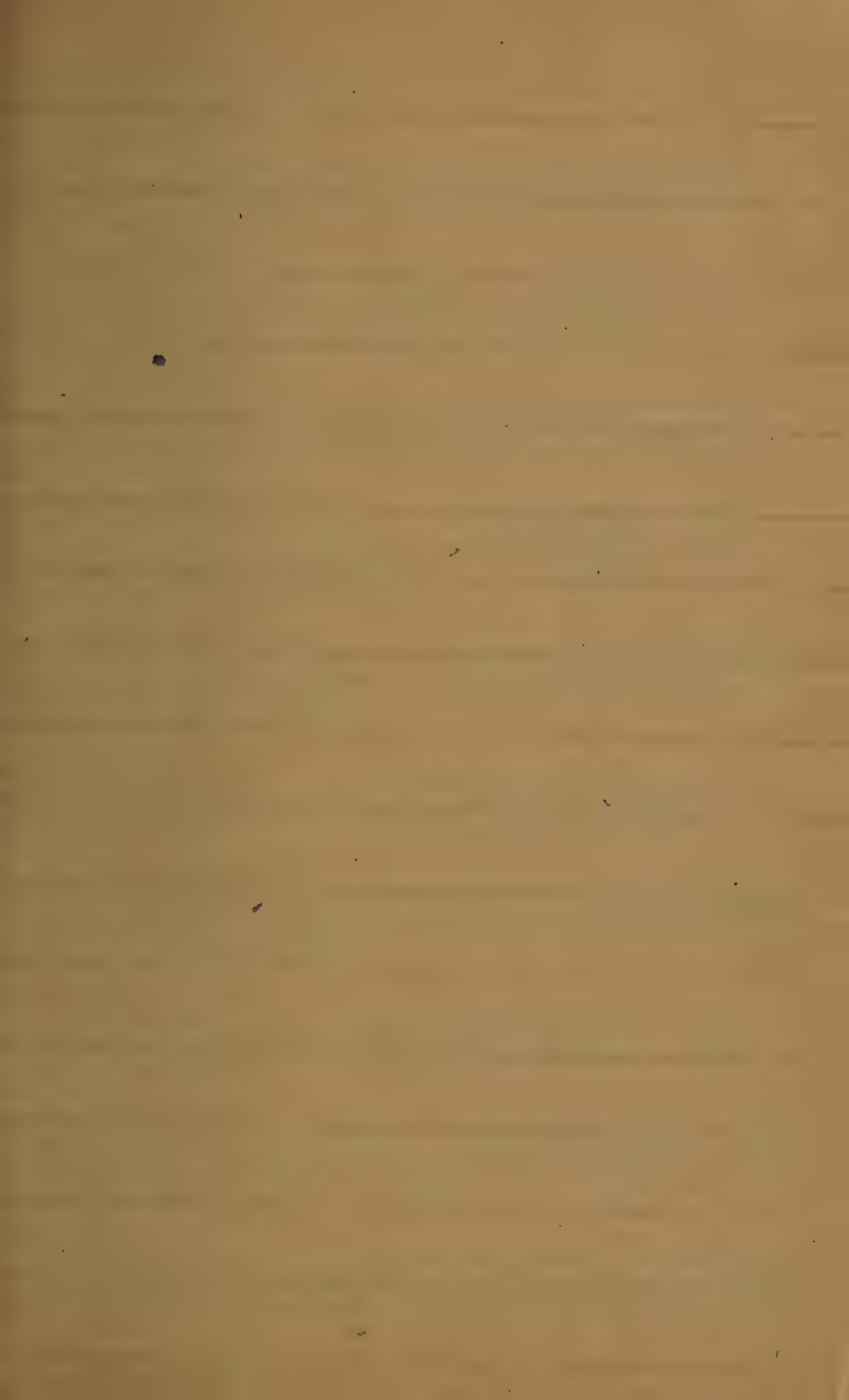
1877











BRUNSWICK, GA., April 30th, 1888.

Messrs. H. S. Miller & Co., Baltimore, Md.:

GENTLEMEN—Yours of 14th (circular) inst is received and noticed. You may have no fears—the analysis speaks for itself.

Yours truly,

LITTLEFIELD & TISON.

SALISBURY, MD., July 17th, 1888.

Messrs. H. S. Miller & Co., Baltimore, Md.:

GENTS—I used some of your Standard Phosphate under potatoes last spring and am well pleased with the results. I had more and better potatoes where I used your Standard than where I used other goods.

HUGH J. PHILLIPS.

MOUNT AIRY, MD., Aug. 21st, 1888.

Messrs. H. S. Miller Co.:

GENTLEMEN—Replying to yours of 20th inst., we have to say that, as far as has come to our knowledge, your goods have given entire satisfaction to our customers, and we believe will be very popular with them in the future.

Yours truly,

A. ANDERSON & Co.

SALISBURY, MD.

Messrs. H. S. Miller & Co.:

GENTLEMEN—Your favor received, and as requested will state that I used your Standard Fertilizers upon my Irish potatoes with better results than from any other of like priced goods. We could see a marked difference in vines, and more so in the potatoes. I will another season use it exclusive, and will recommend it to my friends as the best I ever saw or used.

Yours respectfully,

Oct. 9th, 1888.

HUGH J. PHILLIPS.

NEW BERLIN, N. Y., Nov. 5th, 1888.

H. S. Miller & Co.:

DEAR SIRS—Find enclosed check for four hundred and seven dollars and ninety-one cents (\$407.91). Please to acknowledge same. *The goods gave good results and patrons well satisfied. The potatoes and corn were the best.*

Yours truly,

J. S. WOODARD.

DUDLEY, N. C.

Morris & Taylor, Goldsboro, N. C.:

GENTS—I think H. S. Miller & Co.'s Guano is as good as any I ever used. Expect to use it another year if I use any.

J. G. HOLLOWELL.

Aug. 18th, 1888.

Morris & Taylor, Goldsboro, N. C.:

DEAR SIRS—It is too early for me to say how the H. S. Miller & Co.'s Guano will turn out, but so far I am well pleased with it. I like it as well as any I ever used. All my neighbors are pleased with it.

Yours truly,

J. B. COROWAY.

Snow Hill, N. C., Aug. 16th, 1888.

GOLDSBORO, N. C.

Morris & Taylor:

GENTS—I used H. S. Miller & Co.'s Guano this year under cotton, and think it as good as any fertilizer I ever used.

Yours truly,

A. M. TAYLOR.

Shine, N. C., Aug. 18th, 1888.

BULL HEAD, N. C., Aug. 17th, 1888:

Messrs. Morris & Taylor, Goldsboro, N. C. :

GENTS—I used H. S. Miller & Co.'s Guano this year (1888) for the first time, and can say it is as good as I ever used, and far superior to some other brands.

Yours truly,

R. W. TAYLOR, JR.

GOLDSBORO, N. C.

Messrs. Morris & Taylor :

GENTS—I have used H. S. Miller & Co.'s Guano this year, under my cotton by the side of good compost, and find it ahead of the compost. I think it a fine fertilizer for cotton.

Yours truly,

JAMES ROSE.

Shine, N. C., Aug. 18th. 1888.

Morris & Taylor, Goldsboro, N. C. :

GENTS—I have used four different brands of commercial fertilizers this year, and think H. S. Miller & Co.'s is first of them all. Owing to the very dry season, crops are not looking as well as they would, could we have had good rains.

Yours truly,

A. J. ROWE.

Bull Head, N. C., Aug. 18th, 1888.

P. S.—There was such a bundle of these certificates, we just send you a copy to make a smaller bundle.

MORRIS & TAYLOR.

NORFOLK Co., VA., Aug. 4th, 1888.

H. S. Miller & Co., Baltimore, Md. :

Mr. James Twiford says he used Potato Guano on oats with very satisfactory results.

W. W. OLIVER.

Mr. Geo. W. Francis, of Sweet Air, Md., reports that he used H. S. Miller & Co.'s Harvest Queen Phosphate on $4\frac{1}{2}$ acres of tomatoes, and had a yield of over 400 bushels to the acre. Most of the vines yielded $\frac{1}{2}$ bushel to the vine. Those who saw the crop considered it to be the finest and largest in the neighborhood. Mr. Francis also used the same goods on his potatoes, oats and buckwheat, and says that he wants nothing better.

NORFOLK Co., VA., Aug. 4th, 1888.

H. S. Miller & Co., Baltimore, Md.:

GENTS—Mr. A. J. Dozier says he has used three grades of goods of higher price, and yours gave best results and is well pleased.

W. W. OLIVER

To H. S. Miller & Co., Newark, N. J.:

Having used your Bone Fertilizer for a trial, I can say it is equal to any of the highest priced Fertilizers of other firms, and must say I will have more from you for my spring crops.

THOMAS JENKINS.

For Sir R. W. Cameron.

Clifton Farm, Staten Island.

October 23rd, 1888.

To H. S. Miller & Co., Newark, N. J.:

Having used your Fertilizer for a trial, I can say it is equal to any of the highest priced Fertilizers of other firms, and must say I will have more from you for my spring crops.

H. B. CLARK.

Per Fairview Farm, Garrestsons, S. C.

Oct. 23rd, 1888.

G. & H. B. Cromwell, Prop.

WESTFIELD, N. J., Oct. 20th, 1888.

H. S. Miller & Co.:

DEAR SIRS—I will state that the Standard Phosphates purchased of you last spring were used on corn, oats and potatoes, and in each case gave perfect satisfaction. The crops being very heavy, I think without doubt the largest in the county.

Yours truly,

S. COOPER, M. D.

BEL AIR, MD., August 29th, 1888.

H. S. Miller & Co., Baltimore, Md.:

GENTLEMEN—The past spring I bought from W. Smithson Forwood five (5) tons each of your Ground Bone and Harvest Queen Phosphate. I used them on my sugar corn beside other brands, and they have given me entire satisfaction. I have a field of sugar corn which was planted July 4th, and is now looking first-class; so far think it will equal any I have. The goods are all you have claimed for them and were in first-class drilling condition. I freely recommend them to my brother farmers.

Yours respectfully,

GEO. F. WALKER.

GREENSTONE, MD., Aug. 28th, 1888.

H. S. Miller & Co., Baltimore, Md.:

GENTLEMEN—I bought 1½ tons each of your Harvest Queen Phosphate and Ground Bone from your agent, Mr. W. Smithson Forwood, and applied the same on my sugar corn. I am now pulling my corn and find it to be as good as any I have ever grown, and am well pleased with your Fertilizers and will use them on my wheat this fall. I believe the goods to be all you claim for them.

Yours truly,

EDWIN H. KLAIR.

NORFOLK Co., VA., Aug. 4th, 1888.

H. S. Miller & Co., Baltimore, Md.:

Mr. Geo. W. Frizzell says he used Potato Guano on beans, and was highly pleased with it.

W. W. OLIVER.

DUBLIN, MD., August 28th, 1888.

H. S. Miller & Co., Baltimore, Md.:

GENTLEMEN—I bought from your agent, Mr. W. Smithson Forwood, three (3) tons of your Ground Bone and sowed it broadcast on my corn the past spring. My sugar corn is the best I have ever seen grow, and can safely say I will get over three (3) tons per acre. My field corn is as good as I have grown in 35 years. I attribute the yield to the use of your Fertilizer. I regard these goods as being first-class, and willingly recommend them to my neighbors. I have given Mr. Forwood my order for fall goods and beg to say that I shall continue to buy your Bone so long as it is kept up to the standard.

Respectfully yours,

CHARLES CREW.

SUCCASUNNA, N. J., Aug. 2, 1888.

Messrs. H. S. Miller & Co.:

DEAR SIRS—I will state your Fertilizers is not only good, but is the best article of its kind I ever saw. Tell Clark, your travelling agent, I would like to show him some of the great results from the use of this Fertilizer if he comes near this place any time this season. I have orders for more Fertilizers this fall from the fact that the farmers here presume it to be the best grade they ever used, and I am thoroughly convinced of its value from practical use.

Yours truly,

R. FITZHERBERT.

SAGG, Nov. 26th, 1888.

H. S. Miller & Co.:

DEAR SIRS—I used your Standard Fertilizer on oats with very good results; also your Corn Fertilizer for corn with satisfaction. With your Potato Fertilizer I raised more potatoes per acre than I ever raised with any Fertilizer before, as high as four hundred bushels per acre, with an average of three hundred and fifty.

Respectfully yours,

WM. WALLACE HILDRETH.

Sagg, Suffolk Co., L. I.

BAY SIDE, PRINCESS ANNE CO., VA.,
Nov. 24th, 1888.

We, the undersigned, have used the Pure Animal Bone Fertilizers, manufactured by H. S. Miller & Co., and sold by W. W. Oliver, of Norfolk County, and we have found them to be first-class in every particular, and we shall continue to use them so long as they are kept up to the present high standard of excellence:

G. H. H. WOODHOUSE,

A. J. DOZIER,

JAS. TWIFORD,

W. W. WHITEHURST,

E. R. LOVETT,

S. K. ODELL,

JOSIAH WOODHOUSE,

J. E. ABSOLAM,

W. T. JAMES,

L. W. T. LAND,

GEO. W. FRIZZELL,

JOSIAH WOODHOUSE, JR.

HOW TO FEED BONE.

A few years ago feeding bone to poultry was scarcely thought of, though now it constitutes a very valuable adjunct in feeding, second to nothing but grain in its importance. While occasional feedings of meat scraps to poultry in confinement is of benefit, when bone is fed the meat can be dispensed with, and, in fact, we consider bone far better in its effects, while it has the not undesirable advantage of being much cheaper. Some breeders have a small box of crushed bone in their hen houses, so placed that the birds can have ready access to it, consuming what they want without being able to waste it. This is a good plan, but a more economical one, and one by which you secure more good from the bone, is to cook it (bone meal) with corn meal, boiling it thoroughly, which extracts the rich qualities, or rather liberates them, and the whole mass makes a most excellent food for the birds. It should be made rather stiff or thick, put into shallow pans to cool, and when cold can be fed to the poultry, all kinds of poultry being fond of it. This kind of food comes in well to relieve the monotony of grain food, does not cause an unhealthy laxity of the digestive organs, and is very easily made, for enough can be made at a time to last for several feeds. Like any other kind of food, it is not advisable to feed to the exclusion of other food, especially of grain food, which latter is very good fed whole, when not exclusively fed.—*Poultry World*, August, 1888.

ROYAL P. O., N. C., Dec. 15, 1888.

W. B. Allen, Esq., Youngsville, N. C.:

I used H. S. Miller & Co's Phosphate on cotton this season. I made no actual test, but consider it very good.

T. S. CHARMAICHEL, P. M.

YOUNGVILLE, N. C., Dec. 15, 1888.

W. B. Allen, Esq.:

I used H. S. Miller & Co's Phosphate for the past season, which I found as good as any. It was not a year suitable for any fertilizer.

W. J. ALFORD,
For B. M. MOORE.

P. S.—Mr. Miller & Co.—The main certificate I will send as soon as received, which was by an observer of actual test. I send above two quite influential persons.

W. B. A.

HAMPSTEAD, MD., Dec. 12th, 1888.

A. J. Houck, Esq.:

This is to certify that I used H. S. Miller Co. Harvest Queen Phosphate by the side of other higher priced goods, and found them to be a better goods.

Very respectfully,

CHRISTOPHER SHULKOGEL.

MALDEN, MASS., Dec. 13th, 1888.

Messrs. H. S. Miller & Co.:

Please send me one barrel of Bone Flour, care of Benjamin & Vaughn, Malden Express, C. O. D. Ship by Metropolitan Line.

I think it is the *best* thing to make roses grow and bloom I ever tried, and I am well pleased with the three barrels that I have used.

PETER BOLL

ANALYSIS OF H. S. MILLER & CO'S STANDARD PURE ANIMAL BONE FERTILIZERS.

Name of Brand.	Experiment Station.	Sampled at	Date. 1888.	Moisture.	PHOSPHORIC ACID.				Ammonia.	Potash.	Relative Commercial Value.
					Insoluble.	Soluble.	Reverted.	Available.			
H. S. MILLER & Co's Standard Phosphate....	Pennsylvania.....	York, Pa.....	April 9,		0.10	10.59	0.64	11.23	4.10	3.18	35.17
"	"	Hanover, Pa.....	Dec 10,		0.52	10.68	2.05	12.73	3.58	2.35	35.31
"	"	Wyoming, Del...	May 17,		0.64			12.15	3.40	2.94	34.45
"	"	At Port, Ga.....	" 17,	14.16	0.85	9.20	0.95	10.15	3.20	3.00	24.14
"	"	Saybrook, Conn..	July 11,		0.07	11.35	0.21	11.63	3.25	3.30	30.19
"	"	Rivervale, N. J...	Nov. 10,		0.12	13.44	0.35	13.79	2.83	2.96	31.62
Am. Dis. Bone Phos....	Pennsylvania.....	York, Pa.....	April 9,		2.16	5.56	6.79	12.35	3.28	3.10	35.74
"	"	Milford, Conn....	July 11,		0.73	9.46	1.80	12.04	2.34	2.58	26.86
"	"	Goldsboro, N. C..	Mch.	13.13	0.83	10.22	0.22	10.44	2.31	3.30	22.75
"	"	At Port, Ga....	May 17,	18.75	0.75	9.15	1.40	10.55	2.50	2.00	21.66
"	"	Various Dealers..	Oct. 1,		0.67	8.61	1.19	9.80	2.95	3.04	27.23
"	"	Whippany, N. J..	Aug. 7,		1.85	7.62	4.00	11.62	3.19	1.89	30.06
Potato Fertilizer.....	Delaware.....	Harrington, Del..	May 17.		0.39			8.95	7.78	8.52	49.60

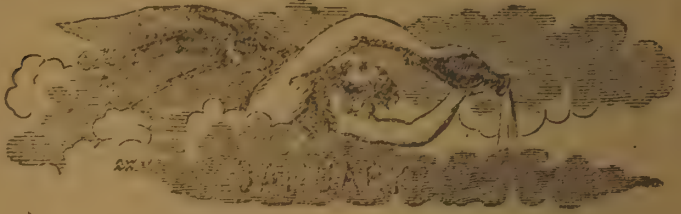
Potato Fertilizer.....	Virginia.....	Norfolk, Va.....	Oct. 6,	4.54	2.48	8.64	1.86	10.09	5.28	7.70	36.53
" ".....	New Jersey.....	Freehold, N. J....	Aug. 7,		0.32	9.64	0.25	9.96	3.18	9.73	32.88
" ".....	" ".....	Rivervale, N. J....	Nov. 10,		0.34	9.27	0.90	10.17	5.10	6.38	36.60
Vegetable Compound...	Virginia.....	Norfolk, Va.....	Oct. 9,	9.58	0.08	8.32	0.08	8.40	10.26	3.86	44.75
" Fertilizer....	Pennsylvania....	York, Pa.....	May 28,		0.47	13.00	1.58	11.58	4.05	8.89	41.57
Dissolved Raw Bone...	New Jersey.....	By Chemist.....	Nov. 10,		5.57	5.47	7.67	13.14	2.51		31.61
Ground Bone.....	Delaware.....	Wyoming, Del....	May 1,		16.64				3.26		27.72
" ".....	Connecticut.....	Various Dealers..	July 27,		18.48				2.69		29.89
" ".....	New Jersey.....		Nov. 10,		24.06				4.49		39.33
Pure Bone Meal.....	Connecticut.....	West Port, Conn.	Mch. 2,		23.43				4.34		39.32
" " ".....	Pennsylvania....	Erie, Pa.....	May 15,		24.00				4.59		38.93
" " ".....	" ".....	Hanover, Pa.....	Sept. 3,		23.62				4.70		39.60
" " ".....	" ".....	"	Dec. 10,		23.84				4.72		39.89
Coarse Bone.....	New Jersey.....	By Chemist.....	Nov. 10,		24.50				5.17		26.84
Medium Bone.....	" ".....	"	Nov. 10,		25.46				4.17		38.17
Bone Flour.....	" ".....	"	Nov. 10,		27.52				2.49		45.30
Harvest Queen.....	Pennsylvania....	York, Pa.....	Apr. 9,		0.81	10.29	2.13	12.42	2.91	2.31	32.72
" ".....	Georgia.....	At Port, Ga.	May 17,	13.50	0.80	9.25	0.85	10.10	3.25	3.10	24.32
" ".....	Delaware.....	Wyoming, Del....	May 17,		0.70			11.78	1.90	1.50	27.38
" ".....	Virginia.....	Norfolk, Va.....	Oct. 5,	6.30	2.64	6.40	1.36	7.76	2.70	2.68	
" " ".....	New Jersey.....	Rivervale, N. J....	Nov 10,		0.41	10.58	1.25	11.83	1.92	2.14	26.57

1st Month.

JANUARY.

31 Days.

Begins on



Tuesday.

MOON'S PHASES.

Days in Yr	Day of Yr	Day of Mo	New Moon, 1 4 8 P. First Quarter, 8 7 40 E. Full Moon, 17 0 7 M. Last Quarter, 24 10 5 M.	New Moon, 31 4 10 M. Moon Apogee, 12 Moon Perigee, 23
			Day of week.	S. R. S. S. M. R. H. W. r
365	1	1	Tuesday.....	7 25 4 44 7 01 8 13
364	2	2	Wednesday.....	7 25 4 44 sets 9 11
363	3	3	Thursday.....	7 25 4 45 6 51 10 2
362	4	4	Friday.....	7 25 4 46 8 1 10 49
361	5	5	Saturday.....	7 25 4 47 9 18 11 23
360	6	6	SUNDAY.....	7 25 4 48 10 23 morn
359	7	7	Monday.....	7 24 4 49 11 25 22
358	8	8	Tuesday.....	7 24 4 50 morn 1 12
357	9	9	Wednesday.....	7 24 4 50 0 25 2 0
356	10	10	Thursday.....	7 24 4 52 1 22 2 51
355	11	11	Friday.....	7 24 4 53 2 21 3 43
354	12	12	Saturday.....	7 23 4 54 3 18 4 34
353	13	13	SUNDAY.....	7 23 4 55 4 14 5 26
352	14	14	Monday.....	7 22 4 56 5 10 6 16
351	15	15	Tuesday.....	7 22 4 57 6 4 7 4
350	16	16	Wednesday.....	7 22 4 59 rises 7 48
349	17	17	Thursday.....	7 21 5 0 5 35 8 29
348	18	18	Friday.....	7 21 5 1 6 35 9 16
347	19	19	Saturday.....	7 20 5 2 7 38 9 58
346	20	20	SUNDAY.....	7 20 5 3 8 42 10 36
345	21	21	Monday.....	7 19 5 4 9 46 11 19
344	22	22	Tuesday.....	7 18 5 6 10 52 ev. 6
343	23	23	Wednesday.....	7 18 5 7 11 58 55
342	24	24	Thursday.....	7 17 5 8 morn 1 49
341	25	25	Friday.....	7 16 5 9 1 6 2 50
340	26	26	Saturday.....	7 15 5 10 2 20 3 54
339	27	27	SUNDAY.....	7 15 5 12 3 30 4 56
338	28	28	Monday.....	7 14 5 13 4 40 6 09
337	29	29	Tuesday.....	7 13 5 14 5 44 7 10
336	30	30	Wednesday.....	7 12 5 15 6 42 8 02
335	31	31	Thursday.....	7 11 5 17 sets 8 54

2d Month.

FEBRUARY.

28 Days.

Begins on

Friday.



MOON'S PHASES

Days in Yr	Day of Yr	Day of Mo.	First Quarter, 7 3 58 E.	Moon Apogee, 9.		
			Full Moon, 15 5 18 E.	Moon Perigee, 24.		
			Last Quarter, 22 6 55 E.			
Day of Week.			S. R.	S. S.	M. S.	H. Wt
334	32	1 Friday	7 10 5	16	6 56	9 40
333	33	2 Saturday	7 9 5	19	8 3	10 24
332	34	3 SUNDAY	7 8 5	20	9 9	11 2
331	35	4 Monday	7 7 5	22	10 10	11 45
330	36	5 Tuesday	7 6 5	23	11 10	morn
329	37	6 Wednesday	7 5 5	24	morn	23
328	38	7 Thursday	7 4 5	25	10	1 15
327	39	8 Friday	7 3 5	26	1 7	2 3
326	40	9 Saturday	7 1 5	28	2 4	2 57
325	41	10 SUNDAY	7 0 5	29	3 1	3 52
324	42	11 Monday	6 59 5	30	3 56	4 50
323	43	12 Tuesday	6 58 5	31	4 46	5 45
322	44	13 Wednesday	6 56 5	32	5 35	6 37
321	45	14 Thursday	6 55 5	34	6 28	7 25
320	46	15 Friday	6 54 5	35	rises	8 7
319	47	16 Saturday	6 52 5	36	6 31	8 52
318	48	17 SUNDAY	6 51 5	37	7 3	9 33
317	49	18 Monday	6 50 5	38	8 43	10 14
316	50	19 Tuesday	6 48 5	40	9 50	10 54
315	51	20 Wednesday	6 47 5	41	11 0	11 40
314	52	21 Thursday	6 46 5	42	morn	ov 31
313	53	22 Friday	6 44 5	43	1	1 28
312	54	23 Saturday	6 43 5	44	1 19	2 32
311	55	24 SUNDAY	6 41 5	45	2 28	3 42
310	56	25 Monday	6 40 5	47	3 33	4 52
309	57	26 Tuesday	6 38 5	48	4 31	6 0
308	58	27 Wednesday	6 36 5	49	5 22	6 56
307	59	28 Thursday	6 35 5	50	6 5	7 43

3d Month.

MARCH.

31 Days.

Begins on



Friday

MOON'S PHASES.

Days in Y'r	Day of Y'r	Day of Mo.	New Moon, First Quarter, Full Moon, Last Quarter,	1 5 1 E 9 0 59 E 17 6 47 M. 24 1 54 M.	New Moon, Moon Apogee, Moon Perigee,	31 6 37 M. 9 21	
Day of Week.			S. R.	S. S.	M. S.	H. W'r	
306	60	1	Friday.....	6 34	5 51	sets	8 28
305	61	2	Saturday.....	6 32	5 52	6 51	9 13
304	62	3	SUNDAY.....	6 31	5 54	7 54	9 52
303	63	4	Monday.....	6 29	5 55	8 56	10 29
302	64	5	Tuesday.....	6 28	5 56	9 57	11 7
301	65	6	Wednesday.....	6 26	5 57	10 56	11 49
300	66	7	Thursday.....	6 24	5 58	11 54	morn
299	67	8	Friday.....	6 23	5 59	morn	34
298	68	9	Saturday.....	6 21	6 0	51	1 24
297	69	10	SUNDAY.....	6 20	6 1	1 46	2 17
296	70	11	Monday.....	6 18	6 2	2 39	3 14
295	71	12	Tuesday.....	6 16	6 3	3 27	4 13
294	72	13	Wednesday.....	6 15	6 4	4 12	5 13
293	73	14	Thursday.....	6 13	6 6	4 52	6 8
292	74	15	Friday.....	6 11	6 7	5 30	6 58
291	75	16	Saturday.....	6 10	6 8	rises	7 41
290	76	17	SUNDAY.....	6 8	6 9	6 30	8 23
289	77	18	Monday.....	6 6	6 10	7 39	9 8
288	78	19	Tuesday.....	6 5	6 11	8 49	9 50
287	79	20	Wednesday.....	6 3	6 12	10 1	10 34
286	80	21	Thursday.....	6 1	6 13	11 12	11 19
285	81	22	Friday.....	6 0	6 14	morn	ev 15
284	82	23	Saturday.....	5 58	6 15	23	1 16
283	83	24	SUNDAY.....	5 56	6 16	1 28	2 22
282	84	25	Monday.....	5 55	6 17	2 29	3 33
281	85	26	Tuesday.....	5 53	6 18	3 20	4 41
280	86	27	Wednesday.....	5 52	6 19	4 4	5 44
279	87	28	Thursday.....	5 50	6 20	4 40	6 37
278	88	29	Friday.....	5 48	6 21	5 14	7 23
277	89	30	Saturday.....	5 47	6 22	5 43	8 1
276	90	31	SUNDAY.....	5 45	6 24	sets	8 41

4th Month.

APRIL.

30 Days.

Begins on



Monday

MOON'S PHASES.

Days in Y'r	Day of Y'r	Day of Mo	First Quarter, 8 8 47 M.	New Moon, 29 9 5 E.
			Full Moon, 15 5 18 E.	Moon Apogee, 5
			Last Quarter, 22 8 56 M.	Moon Perigee, 18
Day of Week.			S. R. S. S.	M. S. H. W'r
275	91	1	Monday.....	5 43 6 25 7 44 9 19
274	92	2	Tuesday.....	5 42 6 26 8 43 9 59
273	93	3	Wednesday.....	5 40 6 27 9 42 10 35
272	94	4	Thursday.....	5 38 6 28 10 41 11 15
271	95	5	Friday.....	5 37 6 29 11 35 12 0
270	96	6	Saturday.....	5 35 6 30 morn morn
269	97	7	SUNDAY.....	5 33 6 31 31 48
268	98	8	Monday.....	5 32 6 32 1 20 1 42
267	99	9	Tuesday.....	5 30 6 33 2 7 2 39
266	100	10	Wednesday.....	5 29 6 34 2 49 3 41
265	101	11	Thursday.....	5 27 6 35 3 36 4 38
264	102	12	Friday.....	5 26 6 36 4 1 5 34
263	103	13	Saturday.....	5 24 6 37 4 42 6 26
262	104	14	SUNDAY.....	5 22 6 38 5 5 7 13
261	105	15	Monday.....	5 21 6 39 rises 7 55
260	106	16	Tuesday.....	5 19 6 40 7 43 8 41
259	107	17	Wednesday.....	5 18 6 41 8 57 9 28
258	108	18	Thursday.....	5 16 6 42 10 11 10 16
257	109	19	Friday.....	5 15 6 43 11 21 11 6
256	110	20	Saturday.....	5 13 6 44 morn ev 5
255	111	21	SUNDAY.....	5 12 6 45 24 1 8
254	112	22	Monday.....	5 10 6 46 1 19 2 14
253	113	23	Tuesday.....	5 9 6 47 2 6 3 22
252	114	24	Wednesday.....	5 8 6 48 2 44 4 23
251	115	25	Thursday.....	5 6 6 50 3 17 5 19
250	116	26	Friday.....	5 5 6 51 3 46 6 9
249	117	27	Saturday.....	5 3 6 52 4 15 6 54
248	118	28	SUNDAY.....	5 2 6 53 4 41 7 34
247	119	29	Monday.....	5 1 6 54 5 8 8 10
246	120	30	Tuesday.....	4 59 6 55 sets 8 49

5th Month.

MAY.

31 Days.

Begins on



Wednesday.

MOON'S PHASES.

Days in Yr	Day of Yr	Day of Mo.	First Quarter, 8 1 42 M.	New Moon, 29 0 19 E.			
			Full Moon, 15 1 42 M.	Moon Apogee, 3, 31			
			Last Quarter, 21 4 53 E.	Moon Perigee, 16			
Day of Week.			S R.	S. S.	M. S.	H. W'r	
245	121	1	Wednesday.....	4 58	6 56	8 31	9 28
244	122	2	Thursday.....	4 57	6 57	9 29	10 8
243	123	3	Friday.....	4 56	6 58	10 24	10 47
242	124	4	Saturday... ..	4 54	6 59	11 15	11 30
241	125	5	SUNDAY.....	4 53	7 0	morn	morn
240	126	6	Monday.....	4 52	7 1	3	19
239	127	7	Tuesday.....	4 51	7 2	46	1 11
238	128	8	Wednesday.....	4 50	7 3	1 25	2 4
237	129	9	Thursday.....	4 49	7 4	1 59	3 1
236	130	10	Friday.....	4 48	7 5	2 32	4 1
235	131	11	Saturday.....	4 47	7 6	3 2	4 56
234	132	12	SUNDAY.....	4 46	7 7	3 30	5 50
233	133	13	Monday.....	4 45	7 8	4 2	6 42
232	134	14	Tuesday.....	4 44	7 9	4 34	7 31
231	135	15	Wednesday.....	4 43	7 10	rises	8 16
230	136	16	Thursday.....	4 42	7 11	9 3	9 14
229	137	17	Friday.....	4 41	7 12	10 12	10 4
228	138	18	Saturday.....	4 40	7 13	11 13	10 56
227	139	19	SUNDAY.....	4 39	7 14	morn	11 55
226	140	20	Monday.....	4 38	7 15	4 ev	55
225	141	21	Tuesday.....	4 37	7 16	46	1 55
224	142	22	Wednesday.....	4 37	7 16	1 22	2 55
223	143	23	Thursday.....	4 36	7 17	1 52	3 51
222	144	24	Friday.....	4 35	7 18	2 18	4 44
221	145	25	Saturday.....	4 35	7 19	2 45	5 34
220	146	26	SUNDAY.....	4 34	7 20	3 12	6 20
219	147	27	Monday.....	4 33	7 21	3 39	7 3
218	148	28	Tuesday.....	4 33	7 21	4 8	7 41
217	149	29	Wednesday.....	4 32	7 22	4 41	8 19
216	150	30	Thursday.....	4 32	7 23	sets	9 2
215	151	31	Friday.....	4 31	7 24	9 11	9 44

6th Month.

JUNE.

30 Days.

Begins on



Saturday.

MOON'S PHASES.

Days in Y'r	Day of Y'r	Day of Mo.	First Quarter, 6 3 1 E	New Moon, 28 3 53 M.			
			Full Moon, 13 8 58 M.	Moon Apogee, 27.			
			Last Quarter, 20 2 36 M.	Moon Perigee, 13.			
Day of Week.			S. R.	S. S.	M. S.	H. W'r	
214	152	1	Saturday	4 31	7 25	10 0	10 23
213	153	2	SUNDAY	4 30	7 25	10 45	11 6
212	154	3	Monday.....	4 30	7 26	11 24	11 53
211	155	4	Tuesday.....	4 30	7 27	12 0	morn
210	156	5	Wednesday.....	4 29	7 27	morn	40
209	157	6	Thursday.....	4 29	7 28	32	1 31
208	158	7	Friday.....	4 29	7 29	1 3	2 24
207	159	8	Saturday.....	4 29	7 29	1 40	3 22
206	160	9	SUNDAY.....	4 28	7 30	2 0	4 19
205	161	10	Monday.....	4 28	7 30	2 20	5 16
204	162	11	Tuesday.....	4 28	7 31	3 4	6 14
203	163	12	Wednesday.....	4 28	7 31	3 44	7 10
202	164	13	Thursday .. .	4 28	7 32	rises	8 2
201	165	14	Friday.....	4 28	7 32	8 59	8 57
200	166	15	Saturday	4 28	7 33	9 55	9 54
199	167	16	SUNDAY	4 28	7 33	10 43	10 45
198	168	17	Monday	4 28	7 33	11 21	11 39
197	169	18	Tuesday.....	4 28	7 34	11 55	ev 33
196	170	19	Wednesday	4 28	7 34	morn	1 27
195	171	20	Thursday	4 28	7 34	33	2 19
194	172	21	Friday	4 29	7 34	50	3 12
193	173	22	Saturday	4 29	7 35	1 17	4 5
192	174	23	SUNDAY.....	4 29	7 35	1 44	4 55
191	175	24	Monday.....	4 30	7 35	2 11	5 45
190	176	25	Tuesday.....	4 30	7 35	2 43	6 32
189	177	26	Wednesday.....	4 30	7 35	3 18	7 16
188	178	27	Thursday.....	4 31	7 35	3 57	7 56
187	179	28	Friday	4 31	7 35	sets	8 39
186	180	29	Saturday	4 31	7 35	8 45	9 21
185	181	30	SUNDAY.....	4 32	7 35	9 26	10 4

7th Month.

JULY.

31 Days

Begins on



Monday

MOON'S PHASES.

Days in Yr.	Day of Yr.	Day of Mo.	First Quarter, 6 0 59 M.	New Moon, 27 7 0 E.		
			Full Moon, 12 4 2 E.	Moon Apogee, 24		
			Last Quarter, 19 2 45 E.	Moon Perigee, 11		
Day of Week.			S. R.	S. S.	M. S.	H. W.
181	182	1 Monday.....	4 32	7 35	10 3	10 43
183	183	2 Tuesday.....	4 33	7 35	10 36	11 25
182	184	3 Wednesday.....	4 33	7 35	11 6	morn
181	185	4 Thursday.....	4 34	7 34	11 34	11
180	186	5 Friday.....	4 35	7 34	morn	57
179	187	6 Saturday.....	4 35	7 34	1	1 43
178	188	7 SUNDAY.....	4 36	7 33	30	2 42
177	189	8 Monday.....	4 37	7 33	1 1	3 44
176	190	9 Tuesday.....	4 37	7 33	1 26	4 45
175	191	10 Wednesday.....	4 38	7 32	2 19	5 51
174	192	11 Thursday.....	4 39	7 32	3 9	6 53
173	193	12 Friday.....	4 39	7 31	rises	7 49
172	194	13 Saturday.....	4 40	7 31	8 32	8 46
171	195	14 SUNDAY.....	4 41	7 30	9 16	9 40
170	196	15 Monday.....	4 42	7 30	9 52	10 28
169	197	16 Tuesday.....	4 42	7 29	10 24	11 15
168	198	17 Wednesday.....	4 43	7 29	10 53	12 3
167	199	18 Thursday.....	4 44	7 28	11 19	50
166	200	19 Friday.....	4 45	7 27	11 46	1 40
165	201	20 Saturday.....	4 46	7 27	morn	2 30
164	202	21 SUNDAY.....	4 47	7 26	14	3 23
163	203	22 Monday.....	4 47	7 25	45	4 17
162	204	23 Tuesday.....	4 48	7 24	1 18	5 10
161	205	24 Wednesday.....	4 49	7 23	1 55	6 1
160	206	25 Thursday.....	4 50	7 22	2 40	6 50
159	207	26 Friday.....	4 51	7 21	3 28	7 36
158	208	27 Saturday.....	4 52	7 20	4 21	8 15
157	209	28 SUNDAY.....	4 53	7 19	sets	8 51
156	210	29 Monday.....	4 53	7 18	8 40	9 41
155	211	30 Tuesday.....	4 54	7 17	9 9	10 20
154	212	31 Wednesday.....	4 55	7 16	9 38	10 58

8th Month.

AUGUST.

31 Days.

Begins on



Thursday.

MOON'S PHASES.

Days in Y'r	Day of Y'r	Day of Mo.	First Quarter, 4 8 27 M. Full Moon, 10 11 43 E. Last Quarter, 18 5 51 M.	New Moon, 26 9 00 M. Moon Apogee, 21. Moon Perigee, 9.			
Day of Week.			S. R.	S. S.	M. S.	H. W'r	
153	213	1	Thursday	4 56	7 15	10 4	11 40
152	214	2	Friday	4 57	7 14	10 32	morn
151	215	3	Saturday	4 58	7 13	11 2	26
150	216	4	SUNDAY	4 59	7 12	11 34	1 17
149	217	5	Monday	5 0	7 11	morn	2 14
148	218	6	Tuesday	5 1	7 10	14	3 17
147	219	7	Wednesday	5 2	7 9	59	4 27
146	220	8	Thursday	5 3	7 7	1 54	5 37
145	221	9	Friday	5 4	7 6	2 58	6 42
144	222	10	Saturday	5 5	7 5	rises	7 39
143	223	11	SUNDAY	5 6	7 4	7 48	8 29
142	224	12	Monday	5 7	7 2	8 21	9 19
141	225	13	Tuesday	5 8	7 1	8 52	10 5
140	226	14	Wednesday	5 9	7 0	9 19	10 45
139	227	15	Thursday	5 10	6 58	9 46	11 26
138	228	16	Friday	5 11	6 57	0 14	ev 11
137	229	17	Saturday	5 12	6 55	10 45	57
136	230	18	SUNDAY	5 13	6 54	11 17	1 47
135	231	19	Monday	5 14	6 53	11 53	2 40
134	232	20	Tuesday	5 15	6 51	morn	3 37
133	233	21	Wednesday	5 16	6 50	34	4 35
132	234	22	Thursday	5 17	6 48	1 21	5 32
131	235	23	Friday	5 18	6 47	2 15	6 24
130	236	24	Saturday	5 19	6 45	3 9	7 10
129	237	25	SUNDAY	5 20	6 44	4 9	7 52
128	238	26	Monday	5 21	6 42	sets	8 33
127	239	27	Tuesday	5 22	6 41	7 39	9 15
126	240	28	Wednesday	5 23	6 39	8 7	9 54
125	241	29	Thursday	5 24	6 37	8 37	10 33
124	242	30	Friday	5 25	6 36	9 5	11 14
123	243	31	Saturday	5 26	6 34	9 36	morn

9th Month.

SEPTEMBER.

30 Days.

Begins on



Sunday.

MOON'S PHASES.

Days in Yr	Day of Yr	Day of Mo.	First Quarter, 2 2 34 E. Full Moon, 9 8 52 M. Last Quarter, 16 11 49 E.	New Moon, 24 9 42 E. Moon Apogee, 17 Moon Perigee, 5
			Day of Week.	S. R. S. S. M. S. H. W. T
122	244	1	SUNDAY.....	5 27 6 33 10 12 1
121	245	2	Monday.. ..	5 28 6 31 10 53 54
120	246	3	Tuesday.....	5 29 6 29 11 45 1 55
119	247	4	Wednesday.....	5 30 6 28 morn 3 6
118	248	5	Thursday... ..	5 31 6 26 42 4 18
117	249	6	Friday.....	5 32 6 24 1 49 5 28
116	250	7	Saturday.....	5 33 6 23 3 0 6 31
115	251	8	SUNDAY.....	5 34 6 21 4 13 7 24
114	252	9	Monday.....	5 35 6 19 rises 8 8
113	253	10	Tuesday.....	5 36 6 18 7 17 8 54
112	254	11	Wednesday.....	5 37 6 16 7 45 9 34
111	255	12	Thursday.....	5 38 6 15 8 14 10 13
110	256	13	Friday.....	5 39 6 13 8 43 10 51
109	257	14	Saturday.....	5 40 6 11 9 14 11 34
108	258	15	SUNDAY.....	5 41 6 9 9 49 ev 20
107	259	16	Monday.....	5 42 6 8 10 29 1 10
106	260	17	Tuesday.....	5 43 6 6 11 13 2 2
105	261	18	Wednesday.....	5 44 6 4 morn 3 0
104	262	19	Thursday.. ..	5 45 6 3 3 4 2
103	263	20	Friday.....	5 46 6 1 58 4 54
102	264	21	Saturday.....	5 47 5 59 1 56 5 52
101	265	22	SUNDAY.....	5 48 5 58 2 56 6 42
100	266	23	Monday.....	5 49 5 56 3 59 7 25
99	267	24	Tuesday.....	5 50 5 54 5 3 8 4
98	268	25	Wednesday.....	5 51 5 53 sets 8 46
97	269	26	Thursday	5 52 5 51 7 6 9 28
96	270	27	Friday.....	5 53 5 49 7 37 10 11
95	271	28	Saturday.....	5 54 5 48 8 12 10 52
94	272	29	SUNDAY.....	5 55 5 46 8 52 11 44
93	273	30	Monday.....	5 56 5 44 9 40 morn

10th Month.

OCTOBER.

31 Days.

Begins on



Tuesday.

MOON'S PHASES.

Days in Yr	Day of Yr	Day of Mo	First Quarter, 1 8 33 R. Full Moon, 8 8 25 H. Last Quarter, 16 7 7 K. New Moon, 24 9 26 M.	First Quarter, 31 3 30 R. Moon Apogee, 15 Moon Perigee, 1, 27
Day of Week.			S. R. S. S. M. S. H. W.	
92	274	1	Tuesday.	5 57 5 43 10 36 42
91	275	2	Wednesday.....	5 58 5 41 11 39 1 47
90	276	3	Thursday	5 59 5 39 morn 2 57
89	277	4	Friday.....	6 0 5 38 48 4 8
88	278	5	Saturday.....	6 1 5 36 1 57 5 14
87	279	6	SUNDAY	6 2 5 34 3 7 6 11
86	280	7	Monday.....	6 3 5 33 4 16 7 1
85	281	8	Tuesday	6 4 5 31 rises 7 43
84	282	9	Wednesday... ..	6 5 5 30 6 12 8 22
83	283	10	Thursday	6 6 5 28 6 42 9 4
82	284	11	Friday	6 7 5 26 7 11 9 44
81	285	12	Saturday	6 8 5 25 7 45 10 23
80	286	13	SUNDAY	6 9 5 23 8 22 11 2
79	287	14	Monday	6 10 5 22 9 5 11 47
78	288	15	Tuesday	6 12 5 20 9 53 ev 36
77	289	16	Wednesday.....	6 13 5 19 10 46 1 30
76	290	17	Thursday	6 14 5 17 11 42 2 25
75	291	18	Friday	6 15 5 16 morn 3 25
74	292	19	Saturday	6 16 5 14 42 4 22
73	293	20	SUNDAY	6 17 5 13 1 43 5 16
72	294	21	Monday	6 18 5 11 2 46 6 6
71	295	22	Tuesday	6 19 5 10 3 51 6 53
70	296	23	Wednesday.....	6 20 5 8 4 59 7 37
69	297	24	Thursday	6 22 5 7 6 7 8 16
68	298	25	Friday.....	6 23 5 6 sets 9 4
67	299	26	Saturday	6 24 5 4 6 48 9 52
66	300	27	SUNDAY	6 25 5 3 7 34 10 39
65	301	28	Monday	6 26 5 2 8 28 11 35
64	302	29	Tuesday.....	6 27 5 1 9 31 morn
63	303	30	Wednesday	6 28 4 59 10 37 86
62	304	31	Thursday	6 29 4 58 11 48 1 42

11th Month.

NOVEMBER.

30 Days.

Begins on



Friday.

MOON'S PHASES.

Days in Yr	Day of Yr	Day of Mo	Full Moon, 7 11 5 M. Last Quarter, 15 3 36 E. New Moon, 22 8 43 E.	First Quarter, 29 0 28 M. Moon Apogee, 12 Moon Perigee, 24
			Day of Week.	S. R. S. S. M. S. H. W. Yr
61	305	1	Friday	6 30 4 57 morn 2 48
60	306	2	Saturday	6 31 4 56 57 3 51
59	307	3	SUNDAY	6 33 4 55 2 6 4 51
58	308	4	Monday	6 34 4 54 3 12 5 44
57	309	5	Tuesday	6 35 4 52 4 16 6 32
56	310	6	Wednesday	6 37 4 51 5 19 7 14
55	311	7	Thursday	6 38 4 50 rises 7 52
54	312	8	Friday	6 39 4 49 5 42 8 32
53	313	9	Saturday	6 40 4 48 6 19 9 15
52	314	10	SUNDAY	6 41 4 47 7 0 9 56
51	315	11	Monday	6 43 4 46 7 45 10 37
50	316	12	Tuesday	6 44 4 45 8 37 11 18
49	317	13	Wednesday	6 45 4 44 9 30 ev 8
48	318	14	Thursday	6 46 4 43 10 28 57
47	319	15	Friday	6 47 4 42 11 27 1 49
46	320	16	Saturday	6 49 4 42 morn 2 42
45	321	17	SUNDAY	6 50 4 41 29 3 40
44	322	18	Monday	6 51 4 40 1 31 4 33
43	323	19	Tuesday	6 52 4 39 2 36 5 27
42	324	20	Wednesday	6 53 4 39 3 44 6 18
41	325	21	Thursday	6 54 4 38 4 53 7 7
40	326	22	Friday	6 56 4 37 6 7 7 53
39	327	23	Saturday	6 57 4 37 sets 8 45
38	328	24	SUNDAY	6 58 4 36 6 16 9 39
37	329	25	Monday	6 59 4 36 7 16 10 32
36	330	26	Tuesday	7 0 4 35 8 25 11 27
35	331	27	Wednesday	7 1 4 35 9 37 morn
34	332	28	Thursday	7 2 4 34 10 47 27
33	333	29	Friday	7 3 4 34 11 58 1 26
32	334	30	Saturday	7 4 4 34 morn 2 24

12 Month.

DECEMBER.

31 Days.

Begins on



Ends on

MOON'S PHASES.

Days in Yr	Day of Yr	Day of Mo.	Full Moon, 7 4 52 M.	First Quarter, 29 0 16 M.
			Last Quarter, 15 9 58 M.	Moon Apogee, 10
			New Moon, 22 7 52 M.	Moon Perigee, 22
Day of Week.			S. R. S. S	M. S. H.W.
31	335	1 SUNDAY.....	7 5 4 34	1 4 3 24
30	336	2 Monday.....	7 6 4 33	2 8 4 19
29	337	3 Tuesday.....	7 7 4 33	3 11 5 14
28	338	4 Wednesday.....	7 8 4 33	4 12 5 59
27	339	5 Thursday.....	7 9 4 33	5 13 6 43
26	340	6 Friday.....	7 10 4 33	6 13 7 26
25	341	7 Saturday.....	7 11 4 33	rises 8 6
24	342	8 SUNDAY.....	7 12 4 33	5 39 8 49
23	343	9 Monday.....	7 13 4 33	6 28 9 33
22	344	10 Tuesday.....	7 14 4 33	7 22 10 13
21	345	11 Wednesday.....	7 14 4 33	8 18 10 54
20	346	12 Thursday.....	7 15 4 33	9 17 11 38
19	347	13 Friday.....	7 16 4 33	10 16 ev 24
18	348	14 Saturday.....	7 17 4 34	11 16 1 12
17	349	15 SUNDAY.....	7 17 4 34	morn 2 0
16	350	16 Monday.....	7 18 4 34	18 2 54
15	351	17 Tuesday.....	7 19 4 34	1 22 3 48
14	352	18 Wednesday.....	7 19 4 35	2 29 4 44
13	353	19 Thursday.....	7 20 4 35	3 40 5 43
12	354	20 Friday.....	7 21 4 36	4 54 6 41
11	355	21 Saturday.....	7 21 4 36	6 9 7 37
10	356	22 SUNDAY.....	7 22 4 36	ets 8 30
9	357	23 Monday.....	7 22 4 37	6 3 9 28
8	358	24 Tuesday.....	7 22 4 38	7 16 10 23
7	359	25 Wednesday.....	7 23 4 38	8 31 11 14
6	360	26 Thursday.....	7 23 4 39	9 44 morn
5	361	27 Friday.....	7 24 4 40	10 54 7
4	362	28 Saturday.....	7 24 4 40	morn 59
3	363	29 SUNDAY.....	7 24 4 41	1 1 53
2	364	30 Monday.....	7 24 4 42	1 4 2 47
1	365	31 Tuesday.....	7 24 4 43	2 9 3 41

1889

CALENDAR.

1889

JANUARY.

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

FEBRUARY.

						1	2
3	4	5	6	7	8	9	
10	11	12	13	14	15	16	
17	18	19	20	21	22	23	
24	25	26	27	28			

MARCH.

						1	2
3	4	5	6	7	8	9	
10	11	12	13	14	15	16	
17	18	19	20	21	22	23	
24	25	26	27	28	29	30	
31							

APRIL.

	1	2	3	4	5	6	
7	8	9	10	11	12	13	
14	15	16	17	18	19	20	
21	22	23	24	25	26	27	
28	29	30					

MAY.

			1	2	3	4	
5	6	7	8	9	10	11	
12	13	14	15	16	17	18	
19	20	21	22	23	24	25	
26	27	28	29	30	31		

JUNE.

						1	
2	3	4	5	6	7	8	
9	10	11	12	13	14	15	
16	17	18	19	20	21	22	
23	24	25	26	27	28	29	
30							

JULY.

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

AUGUST.

				1	2	3	
4	5	6	7	8	9	10	
11	12	13	14	15	16	17	
18	19	20	21	22	23	24	
25	26	27	28	29	30	31	

SEPTEMBER.

1	2	3	4	5	6	7	
8	9	10	11	12	13	14	
15	16	17	18	19	20	21	
22	23	24	25	26	27	28	
29	30						

OCTOBER.

		1	2	3	4	5	
6	7	8	9	10	11	12	
13	14	15	16	17	18	19	
20	21	22	23	24	25	26	
27	28	29	30	31			

NOVEMBER.

					1	2	
3	4	5	6	7	8	9	
10	11	12	13	14	15	16	
17	18	19	20	21	22	23	
24	25	26	27	28	29	30	

DECEMBER.

1	2	3	4	5	6	7	
8	9	10	11	12	13	14	
15	16	17	18	19	20	21	
22	23	24	25	26	27	28	
29	30	31					

Astronomical Calculations.

ECLIPSES FOR 1889.

There will be five eclipses in the year 1889 as follows :

I. A Total Eclipse of the Sun, January 1, visible in Northern California, just north of San Francisco, and thence northeastward through Dakota and Montana nearly to Hudson's Bay, and as a partial eclipse elsewhere in the United States west of New York and Albany. In the States east of the 95th meridian and west of New York the eclipse will be on the Sun at sunset. In Texas and the Pacific States it will end before sunset. The eclipse will be total at Marysville, Point Arenas, Yuba City, Cal., and at Unionville, Nev. Carson City and Virginia City are on the southern limit of totality.

II. A Partial Eclipse of the Moon, Jan. 16, visible. Size 84 digits.

III. An Annular Eclipse of the Sun, June 28, invisible in America. Visible in Southern Africa and East Indies.

IV. A Partial Eclipse of the Moon, July 12, invisible in the U. S.

V. A Total Eclipse of the Sun, December 22, invisible in U. S.

MORNING STARS.

Mercury, from February 14 to April 25, and from June 19 to August 7, and from October 15 to December 7. Venus, after April 30. Mars, after June 17. Jupiter, until March 27. Saturn, after August 16. Uranus, until January 11, and after October 15.

EVENING STARS.

Mercury, until February 14, and from April 25 to June 19, and from August 7 to October 15, and after December 7. Venus, until April 30. Mars, until June 17. Jupiter, after March 27. Saturn, until August 16. Uranus, from January 11 to October 15.

PLANETS BRIGHTEST.

Mercury, January 31, May 1, July 31 and November 3. Venus, March 25 and June 5. Mars, not this year. Jupiter, June 24. Saturn, February 5. Uranus, April 9.

MOVABLE FEASTS AND CHRONOLOGICAL CYCLES.

Septuagesima Sunday...Feb. 17	Whit Sunday.....June 9
Sexagesima Sunday...Feb. 24	Trinity Sunday.....June 16
Quinquagesima Sunday..Mch. 3	Corpus Christi.....June 20
Ash Wednesday.....March 6	Advent Sunday.....Dec. 1
Quadragesima Sunday..Mch. 10	Dominical Letter.....K
Mid-Lent Sunday.....March 31	Epact.....23
Palm Sunday.....April 14	Golden Number.....9
Good Friday.....April 19	Solar Cycle.....22
Easter Sunday.....April 21	Roman Indiction.....3
Low Sunday.....April 28	Julian Period.....6602
Rogation Sunday.....May 26	Dionysian Period.....218
Ascension Day.....May 30	Jewish Lunar Cycle.....6

AGRICULTURAL

Wintering sheep depends much on the condition of the flock at the beginning of the winter. Sheep that are low in flesh in the fall hardly ever improve, but keep going down hill all along, until before the spring-time draws around their pelts are hanging in the shed. See, then, that your flocks are in good condition, and if there are any thin ones among them, separate them from the rest, and give them a little grain each day until they have gained their wonted vigor.

Any cow can be milked dry in a few weeks by irregular milking, sometimes at intervals of twenty-four hours and sometimes six. Separation from her usual company, a change to a new location, a strange milker and a scolding voice, are sources of irritation that more or less impair the milking qualities of a cow.

As a rule, the farmer who carries the most grass on his farm produces the most stock. And those countries which produce the most stock per acre of land cultivated is generally the richest in agricultural resources.

There are two ways in which peaches can be raised every year, one is by layering and the other is by mounding, or planting your trees on mounds like sweet potato hills, only a great deal larger, and about the first of August cover your mound with some kind of cheap covering so that no water can reach the roots of your trees.

The simultaneous development of the bone, wool, fat and muscle in the system of the sheep requires a wide diversity of elements in the food. It would be impossible for instance, to get ewes to thrive on a diet of corn alone; they would grow too fat, and would amount to nothing. Variety is absolutely essential.

Racks are the best thing to store apples in; they may be made of light wall strips securely fastened to posts reaching to within about four feet of the floor. The more scattered fruit is the less apt to rot. Air is essential.

Rates of Postage.

POSTAL CARDS, 1 cent each, go without further charge to all parts of the United States and Canada. Cards for foreign countries (within the Postal Union) 2 cents each. *Postal cards are unmailable with any writing or printing on the address side, except the direction, or with anything pasted upon or attached to them.*

ALL LETTERS, to all parts of the United States and Canada, 2 cents for each ounce or fraction thereof.

LOCAL, OR "DROP" LETTERS, for the city or town where deposited, 2 cents where the carrier system is adopted, and 1 cent where there is no carrier system.

FIRST CLASS.—Letters and all other written matter, *whether sealed or unsealed*, and all other matter *sealed, nailed, sewed, tied, or fastened in any manner* so that it cannot be easily examined, 2 cents for each ounce or fraction thereof.

SECOND CLASS.—Only for publishers and news agents, 1 cent per pound.

NEWSPAPERS and Periodicals (regular publications) can be mailed by the public at the rate of 1 cent for each 4 ounces or fraction thereof.

THIRD CLASS.—Printed matter, in *unsealed wrappers only* (all matter inclosed in notched envelopes must pay letter rates), 1 cent for each 2 ounces or fraction thereof, *which must be fully prepaid*. This includes books, circulars, chromos, engravings, handbills, lithographs, music, pamphlets, proof-sheets and manuscript accompanying the same, reproductions by the electric pen, hektograph, metallograph, papyrograph, and, in short: any reproduction upon paper by any process *except handwritting and the copying press*. Limit of weight 4 lbs., except for a single book, which may weigh more.

FOURTH CLASS.—All mailable matter not included in the three preceding classes which is so prepared for mailing as to be *easily withdrawn from the wrapper* and examined, 1 cent per ounce or fraction thereof. Limit of weight, 4 lbs. Full prepayment compulsory.

REFORWARDING.—Letters will be forwarded from one post office to another upon the *written* request of the *person addressed*, without additional postage charge; but unclaimed packages *cannot be returned to the sender* until stamps are furnished to pay the return postage.

PERMISSIBLE WRITING.—No writing is permitted on third or fourth class matter, except as follows: The name and address of sender on the outside or inside of package, preceded by the word "from." On the wrapper may also be written the names and number of articles inclosed. The sender is further allowed to mark a word or passage in a book or paper to which he desires to call special attention.

POSTAL NOTES.

Upon payment of a fee of 3 cents each, Postal Notes for any amount under Five Dollars may be purchased at any Money-order office, payable to bearer at any time within three calendar months from the last day of the month during which it was issued; but payable only at such Money-order Office as the purchaser may select or at the office of issue.

MONEY ORDERS.

For Orders not exceeding \$5.....	5 cents.
Exceeding \$5 and not exceeding \$10.....	8 "
" 10 " " 15.....	10 "
" 15 " " 30.....	15 "
" 30 " " 40.....	20 "
" 40 " " 50.....	25 "
" 50 " " 60.....	30 "
" 60 " " 70.....	35 "
" 70 " " 80.....	40 "
" 80 " " 100.....	45 "

When a larger sum than \$100 is required, additional Orders to make it up must be obtained.

FOREIGN POSTAGE.

The rates for letters are for the half-ounce or fraction thereof, and those for newspapers for 2 ounces or fraction thereof:

To Great Britain and Ireland, France, Spain, all parts of Germany, including Austria, Denmark, Switzerland, Italy, Russia, Norway, Sweden, Turkey (European and Asiatic), Egypt, letters 5 cents, newspapers 1 cent for each 2 ounces or fraction thereof.

To Australia, letters, via San Francisco (except to New South Wales), 5 cents; via Brindisi, 15 cents; newspapers, via San Francisco, 2 cents; via Brindisi, 4 cents. China, letters, via San Francisco, 5 cents; via Brindisi, 13 cents; 4 cents for each paper not weighing over 4 ounces. British India, Italian mail, letters 5 cents; newspapers, 1 cent for 2 ounces. Japan, letters via San Francisco, 5 cents; newspapers, 1 cent for 2 ounces.

RECIPES.

GOOD USE FOR REMNANTS OF COLD ROAST OR BOILED MEAT.—Take out all the gristle and bones, and chop the meat very fine ; add a little onion that has been stewed and also chopped fine, and season both well. Have ready some potatoes boiled, mashed and beaten up light, about as much as there is of the meat, and when they are mixed add a piece of butter, and an egg, slightly beaten, shape it into a loaf and bake brown.

BEETS.—Clean these nicely, but do not pare them, leaving on a short piece of the stalk to retain the coloring and sweet juices of the vegetable. Young beets will cook tender in an hour ; old beets require several hours' boiling. When done, skin quickly while hot, slice into your vegetable dish, put on salt, pepper and a little butter and they are then ready for the table.

BREAD PUDDING.—For a good sized dish, two small cups of crumbs are enough. Sprinkle over them bits of butter and a few raisins or currants, fill the dish with milk, and let it stand two or three hours, then add two eggs, beaten very light and bake only until the custard is set.

GINGER BREAD.—5 cups flour, 1 heaping tablespoonful butter, 1 cup of molasses, 1 cup of sugar, 1 cup of sour milk, two teaspoonfuls soda dissolved in hot water, 2 teaspoonfuls ginger, 1 teaspoonful cinnamon.

SOUSE.—Clean carefully a pig's feet and hocks ; boil till soft ; take the meat from the bone and chop moderately fine, season and set it away. Fry in vinegar.

SLICED ONION.—Raw onions peeled, sliced and seasoned with salt, pepper and vinegar, make a nice relish in the Spring before fresh vegetables come.

BOILED HAM.—Soak twenty-four hours ; put into a pot with cold water and boil gently for five or six hours ; take it off the fire and let it remain in the water until cold. Peel off the skin and sprinkle with bread or cracker crumbs, and brown in the oven.

AMOUNT OF PAINT REQUIRED FOR A GIVEN SURFACE.

It is impossible to give a rule that will apply in all cases, as the amount varies with the kind and thickness of the paint, the kind of wood or other material to which it is applied, the age of the surface, etc. The following is an approximate rule: Divide the number of square feet of surface by 200. The result will be the number of gallons of liquid paint required to give two coats; or, divide by 18 and the result will be the number of pounds of pure ground white lead required to give three coats.

HOW TO KILL GREASE SPOTS BEFORE PAINTING.

Wash over smoky or greasy parts with saltpetre, or very thin lime white-wash. If soap-suds are used, they must be washed off thoroughly, as they prevent the paint from drying hard.

DIMENSIONS OF ONE ACRE.

A square, whose sides are 12.649 rods, or 69.57 yards or 208 71 feet long, contains one acre. Table of dimensions of rectangle containing one acre:

RODS.

1 x160	1½ x106⅔	2 x 80	2½ x 64
3 x53⅔	3½ x 45 5-7	4 x 40	4½ x 35 5-9
5 x32	5½ x 29 1-11	6 x 26⅔	6½ x 24 8-13
7 x22 6-7	7½ x 21⅔	8 x 20	8½ x 18 14-17
9 x17 7-9	9½ x 16 16-19	10 x 16	10½ x 15 5-21
11 x 14 6-11	11½ x 13 21-33	12 x 13⅔	12½ x 12 4-5
.....			12 13-20 x 12 13-20

ROOF ELEVATIONS.

By the "pitch" of a roof is meant the relation which the height of the ridge above the level of the roof-plates bears to the span, or the distance between the studs on which the roof rests.

The length of rafters for the most common pitches can be found as follows from any given span:

If $\frac{1}{4}$ pitch, multiply span by .559, or 7-12 nearly.

If $\frac{1}{3}$ " " " " .6, or 3-5 "

If $\frac{2}{3}$ " " " " .625, or $\frac{5}{8}$ "

If $\frac{1}{2}$ " " " " .71, or 7-10 "

If $\frac{1}{8}$ " " " " .8, or 4-5 "

If full " " " " 1.12, or $1\frac{1}{8}$ "

SHINGLES REQUIRED IN A ROOF.

To the square foot it takes 9 if exposed four inches; 8 if exposed $4\frac{1}{2}$ inches, and 7.1-5 if exposed 5 inches to the weather.

Find the number of shingles required to cover a roof 38 ft. long, and the rafters on each side 14 ft. Shingles exposed $4\frac{1}{2}$ inches.

$$28 \times 38 = 1064 \text{ (sq ft.) } \times 8 = 8512 \text{ shingles. Ans.}$$

To find the length of rafters, giving the roof *one-third* pitch: take *three fifths* of the width of the building. If the building is 30 feet wide, they must be 18 feet long, exclusive of projection.

The following very useful and practical calculations will be found exceedingly handy, as guides to the builder, in making up his figures when he is called upon to estimate for all portions of a job, many of which are not entirely in his own particular line:

MASON WORK—BRICK.

$1\frac{1}{2}$ barrels lime and $\frac{1}{2}$ yard sand will lay 1,000 brick.

One man with $1\frac{1}{4}$ tenders will lay 1,800 to 2,000 brick per day.

RUBBLE.

$1\frac{1}{2}$ barrels lime and 1 yard of sand will lay 100 feet of stone.

One man will lay 150 feet of stone per day with one tender.

CEMENT.

1½ barrels cement and ¾ yard sand will lay 100 feet rubble stone. Same time as to mason and tender as rubble.

FLOOR, WALL AND ROOF MEASURE.

To find the number of square yards in a floor or wall:
RULE—Multiply the length by the width or height (in feet) and divide the product by 9; the result will be square yards.

ESTIMATES OF MATERIALS.

3½ barrels of lime will do 100 square yards plastering, two coats.

2 barrels of lime will do 100 square yards plastering, one coat.

1½ bushels of hair will do 100 square yards plastering.

1¼ yards good sand will do 100 square yards plastering.

⅔ barrel of plaster (stucco) will hard-finish 100 square yards plastering.

1 barrel of lime will lay 1,000 bricks. (It takes good time to do it.)

2 barrels of lime will lay 1 cord rubble stone.

½ barrel of lime will lay 1 perch rubble stone. (Estimating ¼ cord to perch.)

To every barrel of lime estimate about ⅔ yards of good sand for plastering and brick work.

AGE AND GROWTH OF TREES.

An oak tree in 3 years grows 2 ft. 10½ ins. A larch 3 ft. 7½ ins., at 70 years it is full grown, and a tree of 79 years was 102 ft. high and 12 ft. girth, containing 253 cubic ft. Another of 80 years was 90 ft. and 17 ft. and 300 cubic feet. An elm tree in 3 years grows 8 ft. 3 in. A beech, 1 ft. 8 in. A poplar, 6 ft. A willow, 9 ft. 3 in. An elm is full grown in 150 years and it lives 300 or 600. Ash is full grown in 100 and oak in 200.

The mahogany is full grown in 200 years to a vast size. A Polish oak 40 ft. round had 600 circles. An oak in Dorsetshire in 1755 was 68 ft. round, 2 near Cranborne Lodge are 38 ft. and 36 ft. There are yews from 10 to 20 ft. diam., whose age is from 1,000 to 2,000 years. A lime in the Crisons is 51 ft. round and about 600 years old. An elm in the Pays de Vaud is 18 ft. diam. and 360 years old. The African baobab is the patriarch of living organizations, one specimen by its circles is estimated at 5,700 years old by Adamson and Humboldt. The trunk is but 12 or 15 ft. to the branches, and often 75 ft. round. A cypress in Mexico is 120 ft. round and is estimated by De Candolle to be older than Adamson's baobab. The cypress of Montezuma is 41 feet round. Strabo wrote of a cypress in Persia as being 2,500 years old. The largest tree in Mexico is 127 ft. round and 120 high, with branches of 30 ft. A chestnut tree on Mount Etna is 106 ft. round close to the ground and 5 of its branches resemble great trees. De Candolle says there are oaks in France 1,500 years old. The Wallace oak near Paisley is nearly 800 years old. The yew trees at Fountain's Abbey are about 1,200 years old. That at Crowhurst 1,500. That at Fortingal, above 2,000. That at Braburn, 2,500 to 3,000. Ivys reach 500 or 600 years. The larch the same. The lime 600 or 700 years. The trunk of a walnut tree 12 ft. in diam., hollowed out, and furnished as a sitting-room, was imported from America and exhibited in London. The trunk was 80 ft. high, without a branch, and the entire height 150 ft., the bark 12 ins. thick, and the branches from 3 to 4 ft. in diam. The California pine is from 150 to 200 ft. high and from 20 to 60 ft. in diam. The forests in watered tropical countries are formed of trees from 100 to 200 ft. high, which grow to the water's edge of rivers, presenting a solid and impenetrable barrier of trunks 10 or 12 ft. in diam. The dragon tree is in girth from 40 to 100 ft. and 50 or 60 feet high, and a misosa in South America is described whose head is 600 ft. round.

The duration of well seasoned wood, when kept dry, is very great, as beams still exist which are known to be nearly 1,100 years old. Piles driven by the Romans, and used in the formation of bridges prior to the Christian era, have been examined of late, and found to be perfectly sound after an immersion of nearly 2,000 years.

HOW DEEP IN THE GROUND TO PLANT CORN.

The following is the result of an experiment with Indian Corn. That which was planted at the depth of $\frac{7}{8}$ inch, sprout appeared in..... 8 days
1 inch, sprout appeared in..... $8\frac{1}{2}$ days
 $1\frac{1}{2}$ inch, sprout appeared in..... $9\frac{1}{2}$ days
2 inches, sprout appeared in..... 10 days
 $2\frac{1}{2}$ inches, sprout appeared in..... $11\frac{1}{2}$ days
3 inches, sprout appeared in..... 12 days
 $3\frac{1}{2}$ inches, sprout appeared in..... 13 days
4 inches, sprout appeared in..... $13\frac{1}{2}$ days

The more shallow the seed was covered with earth, the more rapidly the sprout made its appearance, and the stronger afterwards was the stalk. The deeper the seed lay, the longer it remained before it came to the surface. Four inches was too deep for the maize, and also too deep for smaller kernels.

HOW TO MEASURE CORN IN CRIB, HAY IN A MOW, ETC.

This rule will apply to a crib of any kind. Two cubic feet of sound, dry corn in the ear will make a bushel shelled. To get the quantity of shelled corn in a crib of corn in the ear, measure the length, breadth and height of the crib, inside of the rail; multiply the length by the breadth and the product by the height; then divide

the product by two, and you have the number of bushels in the crib.

To find the number of bushels of apples, potatoes, etc., in a bin, multiply the length, breadth and thickness together, and this product by 8, and point off one figure in the product for decimals.

To find the amount of hay in a mow, allow 512 cubic feet for a ton, and it will come out very near correct.

HOW GRAIN WILL SHRINK.

Farmers rarely gain by keeping their grain after it is fit for market, when the shrinkage is taken into account. Wheat, from the time it is threshed, will shrink two quarts to the bushel, or six per cent. in six months, in the most favorable circumstances. Hence, it follows that ninety-four cents a bushel for wheat when first threshed in August, is as good, taking into account the shrinkage alone, as one dollar in the following February.

Corn shrinks much more from the time it is first husked. One hundred bushels of ears, as they come from the field in November, will be reduced to not far from eighty. So that forty cents a bushel for corn in the ear, as it comes from the field, is as good as fifty in March, shrinkage only being taken into the account.

In the case of potatoes—taking those that rot and are otherwise lost—together with the shrinkage, there is but little doubt that between October and June, the loss to the owner who holds them is not less than thirty-three per cent.

This estimate is taken on the basis of interest at 7 per cent., and takes no account of loss by vermin.

WHAT A DEED TO A FARM IN MANY STATES INCLUDES.

Everyone knows it conveys all the fences standing on the farm, but all might not think it also included the

fencing-stuff, posts, rails, etc., which had once been used in the fence, but had been taken down and piled up for future use again in the same place. But new fencing material, just bought, and never attached to the soil, would not pass. So piles of hop poles stored away, if once used on the land and intended to be again so used, have been considered a part of it, but loose boards or scaffold poles merely laid across the beams of the barn, and never fastened to it, would not be, and the seller of the farm might take them away. Standing trees, of course, also pass as part of the land; so do trees blown down or cut down, and still left in the woods where they fell, but not if cut, and corded up for sale; the wood has then become personal property.

If there be any manure in the barnyard, or in the compost heap on the field, ready for immediate use, the buyer ordinarily, in the absence of any contrary agreement, takes that also as belonging to the farm, though it might not be so, if the owner had previously sold it to some other party, and had collected it together in a heap by itself, for such an act might be a technical severance from the soil, and so convert real into personal estate; and even a lessee of a farm could not take away the manure made on the place while he was in occupation. Growing crops also pass by the deed of a farm, unless they are expressly reserved; and when it is not intended to convey those, it should be so stated in the deed itself; a mere oral agreement to that effect would not be, in most States, valid in law. Another mode is to stipulate that possession is not to be given until some future day, in which case the crops or manures may be removed before that time.

As to the buildings on the farm, though generally mentioned in the deed, it is not absolutely necessary they should be. A deed of land ordinarily carries all the buildings on it, belonging to the grantor, whether mentioned or not; and this rule includes the lumber and timber of any old building which has been taken down or blown down, and packed away for future use on farm.

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